



BIPAC 7100SG

**802.11g ADSL Modem/Router with
Single Ethernet Port**

User Manual

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1.1 An Overview of BIPAC 7100SG

BIPAC 7100SG ADSL Modem/Router provides a high-speed Ethernet port for high-speed Internet browsing. It can support downstream transmission rates of up to 8Mbps and upstream transmission rates of up to 1024Kbps. It is compliant with Multi-Mode standard (ANSI T1.413, Issue 2; G.dmt (G.992.1); G.lite (G992.2); G.hs (G994.1)).

The product supports PPPoA (RFC 2364 – PPP (Point-to-Point Protocol) over ATM Adaptation Layer 5), RFC 1483 encapsulation over ATM (bridged or routed), PPP over Ethernet (RFC 2516), and IPoA (RFC1577) to establish a connection with ISP. The product also supports VC-based and LLC-based multiplexing.

It is the perfect solution to connect a small group of PCs to a high-speed broadband Internet connection. Multi-users can have high-speed Internet access simultaneously.

This product also serves as an Internet firewall, protecting your network from being accessed by outside users. Not only provide the natural firewall function (Network Address Translation, NAT), it also provides rich firewall features to secure user's network. All incoming data packets are monitored and filtered. Besides, it can also be configured to block internal users from accessing to the Internet.

The product provides two levels of security support. First, it masks LAN users' IP addresses which are invisible to outside users on the Internet, making it much more difficult for a hacker to target a machine on your network. Secondly, it can block and redirect certain ports to limit the services that outside users can access. For example, to ensure that games and other Internet applications will run properly, user can open some specific ports for outside users to access internal services in network.

Integrated DHCP (Dynamic Host Control Protocol) services, client and server, allow multiple users to get their IP addresses automatically on boot up from the product. Simply set local machines as a DHCP client to accept a dynamically assigned IP address from DHCP server and reboot. Each time local machine is powered up; the router will recognize it and assign an IP address to instantly connect it to the LAN.

For advanced users, Virtual Service function allows the product to provide limited visibility to local machines with specific services for outside users. An ISP (Internet Service Providers) provided IP address can be set to the product and then specific services can be rerouted to specific computers on the local network. For instance, a dedicated web server can be connected to the Internet via the product and then incoming requests for HTML that are received by the product can be rerouted to the dedicated local web server, even though the server now has a different IP address. In this example, the product is on the Internet and vulnerable to attacks, but the server is protected.

Virtual Server can also be used to re-task services to multiple servers. For instance, the product can be set to allow separated FTP, Web, and Multiplayer game servers to share the same Internet-visible IP address while still protecting the servers and LAN users from hackers.

1.2 Package Contents

1. Billion BIPAC 7100SG ADSL Modem/Router
2. One CD-ROM containing the driver and online manual
3. One Quick Start Guide
4. One RJ-11 ADSL/telephone cable
5. One CAT-5 straight LAN cable
6. One power adapter

1.3 BIPAC 7100SG Features

BIPAC 7100SG ADSL Modem/Router provides the following features:

- **ADSL Multi-Mode Standard:** Supports downstream transmission rates of up to 8Mbps and upstream transmission rates of up to 1024Kbps. It is compliant with Multi-Mode standard (ANSI T1.413, Issue 2; G.dmt (G.992.1); G.lite (G992.2); G.hs (G994.1)).
- **Multi-Protocol to Establish A Connection:** Supports PPPoA (RFC 2364 - PPP over ATM Adaptation Layer 5), RFC 1483 encapsulation over ATM (bridged or routed), PPP over Ethernet (RFC 2516) and IPoA (RFC1577) to establish a connection with ISP. The product also supports VC-based and LLC-based multiplexing.
- **Quick Installation Wizard:** Supports a WEB GUI page to install this device quickly. With this wizard, an end user can enter the information easily which they from the ISP, then surf the Internet immediately.
- **Universal Plug and Play (UPnP) and UPnP NAT Traversal:** This protocol is used to enable simple and robust connectivity among stand-alone devices and PCs from many different vendors. It makes network simple and affordable for users. UPnP architecture leverages TCP/IP and the Web to enable seamless proximity networking in addition to control and data transfer among networked devices. With this feature enabled, users can now connect to Net meeting or MSN Messenger seamlessly.
- **Network Address Translation (NAT):** Allows multi-users to access outside resource such as Internet simultaneously with one IP address/one Internet access account. Besides, many application layer gateway (ALG) are supported such as web browser, ICQ, FTP, Telnet, E-mail, News, Ping and others.
- **Domain Name System (DNS) relay:** Provides an easy way to map the domain name (a friendly name for user such as www.yahoo.com) and IP address. When local machine sets its DNS server with this router's IP address. Then every DNS conversion request packet from the PC to this router will be forwarded to the real DNS in outside network. After the router gets the reply, then forwards it back to the PC.
- **Dynamic Domain Name System (DDNS):** The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname. This dynamic IP address is the WAN IP address. For example, to use the service, you must first apply an account from this free Web server <http://www.dyndns.org/>. There are more than 5 DDNS servers supported.
- **PPP over Ethernet (PPPoE):** Provides embedded PPPoE client function to establish a connection. Users can get greater access speed without changing the operation concept, sharing the same ISP account and paying for one access account. No PPPoE client software is required for local computer. The Automatic Reconnect and Disconnect Timeout (Idle Timer) functions are provided, too.
- **Virtual Server:** User can specify some services to be visible from outside users. The router can detect incoming service request and forward it to the specific local computer to handle it. For

example, user can assign a PC in LAN acting as WEB server inside and expose it to the outside network. Outside user can browse inside web server directly while it is protected by NAT. A DMZ host setting is also provided to a local computer exposed to the outside network, Internet.

- **Firewall:** Supports SOHO firewall with NAT technology. Automatically detects and blocks the Denial of Service (DoS) attack. The URL-blocking and packet filtering are also supported. The hacker's attack will be recorded associated with timestamp in the security logging area. More firewall features will be added continually, please visit our web site to download latest firmware.
- **Dynamic Host Control Protocol (DHCP) client and server:** In the WAN site, the DHCP client can get an IP address from the Internet Server Provider (ISP) automatically. In the LAN site, the DHCP server can allocate multiple clients IP addresses and distribute them including IP address, subnet mask as well as DNS IP address to local computers. It provides an easy way to manage the local IP network.
- **Rich Packet Filtering:** Not only filter the packet based on IP address, but also based on Port numbers and MAC address. It will increase the performance in LAN and WAN, also provide a higher-level security control
- **SNTP:** An easy way to get the network real time information from an SNTP server.
- **Web based GUI:** Supports web based GUI for configuration and management. It is user-friendly and comes with on-line help. It also supports remote management capability for remote users to configure and manage this product.
- **Virtual Private Networks (VPN):** Allows user to make a tunnel with a remote site directly to secure the data transmission among the connection. User can use IPsec with IKE key management are supported by this router to make a VPN connection and the router already provides L2TP, IPsec and PPTP pass through function to establish a VPN connection if the user likes to run the PPTP client in his local computer.
- **Simple Network Management Protocol (SNMP):** It is an easy way to remotely manage the router via SNMP.

1.4 BIPAC 7100SG Application



Using Billion ADSL Modem/Router

2.1 Cautions for Using Billion ADSL Modem/Router

Do not place the router under high humidity and high temperature.



Do not use the same power source for the device with other equipment.

Do not open or repair the case yourself. If the device is too hot, turn off the power immediately and have a qualified serviceman repair it.

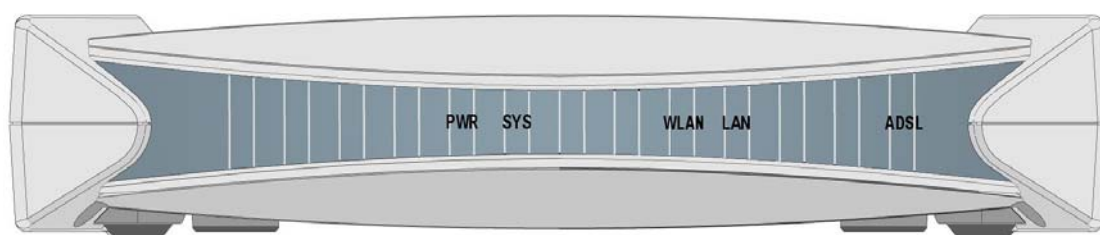
Avoid using this product and all accessories outdoors.



Place the product on the stable surface.

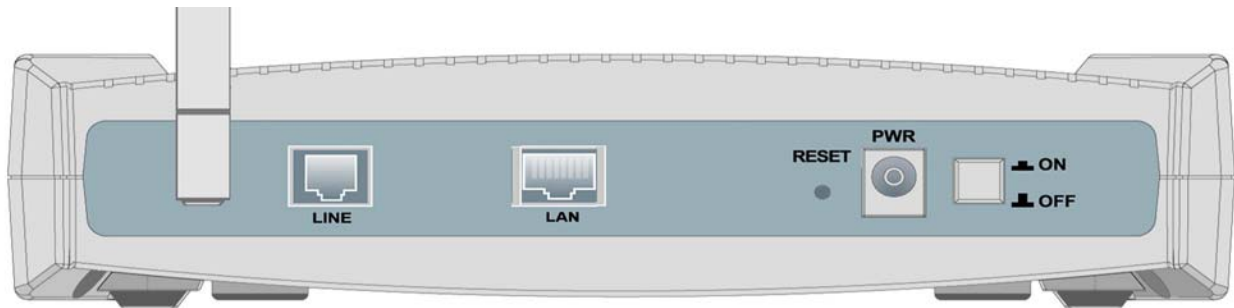
Only use the power adapter that comes with the package.

2.2 The Front LEDs



LED		Meaning
1	PWR	● Lit green when power adapter is connected.
2	SYS	● When lit, it indicates that the device is working properly.
3	WLAN	● Lit green when the wireless connection is established. Flashes when sending/receiving data.
4	LAN	● Lit green when the LAN1 link is connected.
5	ADSL	● When lit, it indicates that the ADSL (Line) port is connected to the DSLAM and working properly.

2.3 The Rear Ports



Port		Meaning
1	Power Switch	Power ON/OFF switch
2	PWR	Connect the supplied power adapter to this jack.
3	RESET	<p>After the device is powered on, press it to reset the device or restore to factory default settings.</p> <p>0-3 seconds: reset the device</p> <p>6 seconds above: restore to factory default settings (this is used when you can not login to the router, e.g. forgot the password)</p>
4	LAN	Connect a UTP Ethernet cable (Cat-5 or Cat-5e) to the LAN port when connecting to a PC or an office/home network of 10Mbps or 100Mbps.
5	LINE	Connect the supplied RJ-11 ("telephone") cable to this port when connecting to the ADSL/telephone network.

2.4 Cabling

Through Ethernet Port

The product's LAN port is wired just like a Network Adapter's port. From the product directly to a PC, the cable should be an Ethernet straight cable. From the product to a hub or switch, the cable should be an Ethernet straight through cable to a normal hub/switch port, or an Ethernet crossover cable to an uplink port.

The most common problem associated with Ethernet is bad cabling or ADSL line. Make sure that all connected devices are turned on. On the front of the product is a bank of LEDs. As a first check, please

verify that the PWR, SYS, LAN LNK and ADSL SYN LEDs are lit. If they are not, verify that you are using the proper cables.

So long as the cables are connected and the LEDs are lit normally, follow section “**3.2 Configuring the Network Properties**” below to modify the network settings.



Since the product cannot auto-detect whether your cable is correct or not, please make sure you are using the right cable to a PC or a Hub.

BIPAC 7100SG can be configured with your Web browser. The web browser is included as a standard application in following operation systems, UNIX, Linux, Mac OS, Windows 95/98/NT/2000/Me/XP, etc. The product provides a very easy and user-friendly interface for configuration.

3.1 Before Configuration

This section describes the configuration required by LAN-attached PCs that communicate with BIPAC 7100SG, either to configure the device, or for network access. These PCs must have an Ethernet interface installed properly, be connected to BIPAC 7100SG either directly or through a hub, and have TCP/IP installed and configured to obtain an IP address through a DHCP server or a fixed IP address which must be in the same subnet of BIPAC 7100SG. The default IP address of router is 192.168.1.254 and subnet mask is 255.255.255.0. The best and easy way is to configure the PC to get an IP address from BIPAC 7100SG.

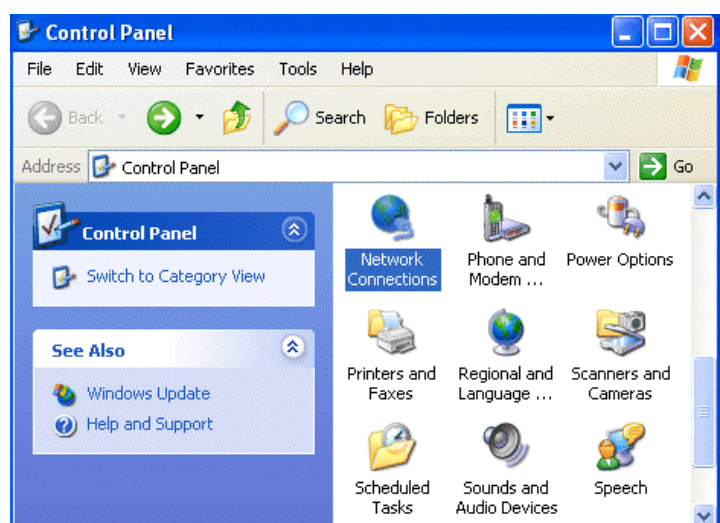
Please follow the steps below for PC's network environment installation. Before taking the first step, please check your PC's network components. If your PC connects the ADSL Modem/Router through Ethernet port, the TCP/IP protocol stack and Ethernet network adapter must be installed. If not, please refer to MS Windows relative manuals.



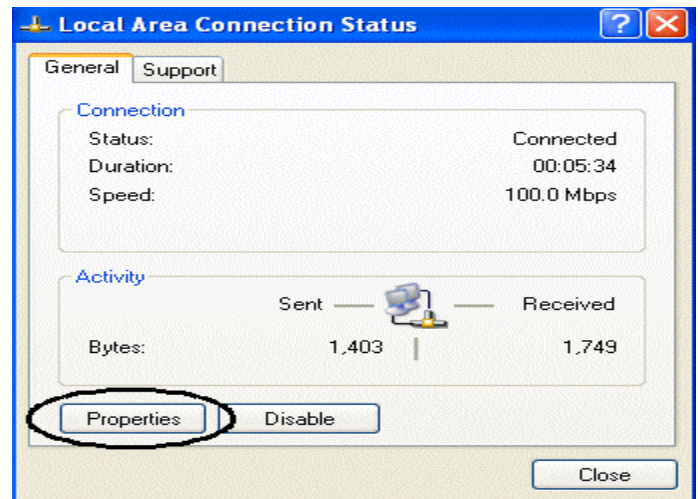
Any TCP/IP capable workstation can be used to communicate with or through BIPAC 7100SG. To configure other types of workstations, please consult the manufacturer's documentation.

Configuring PC in Windows XP

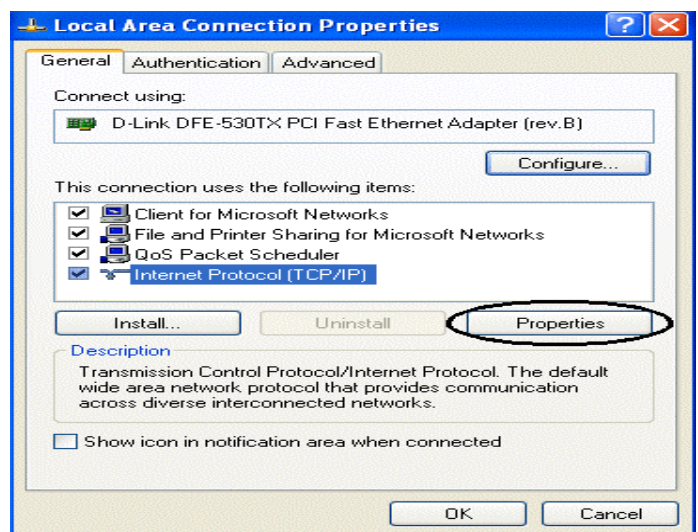
1. Go to **Start / Control Panel** (in **Classic View**). In the Control Panel, double-click on **Network Connections**.
2. Double-click **Local Area Connection**.



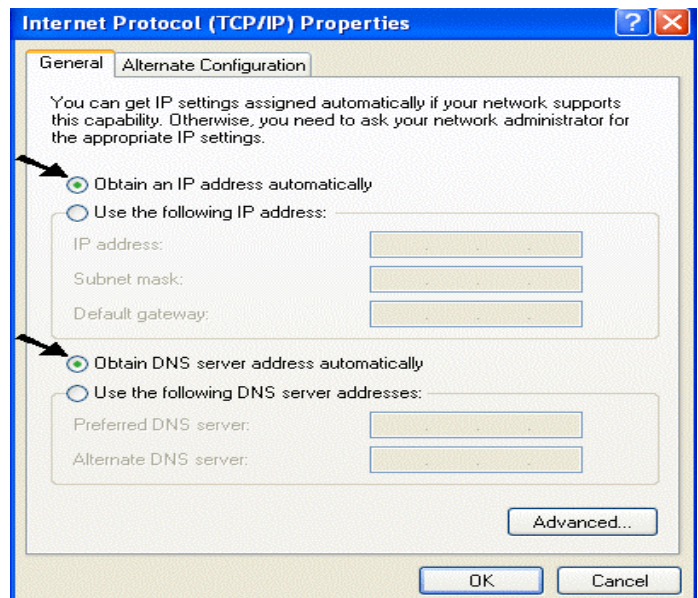
3. In the **Local Area Connection Status** window, click **Properties**.



4. Select **Internet Protocol (TCP/IP)** and click **Properties**.



5. Select the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons.
6. Click **OK** to finish the configuration.

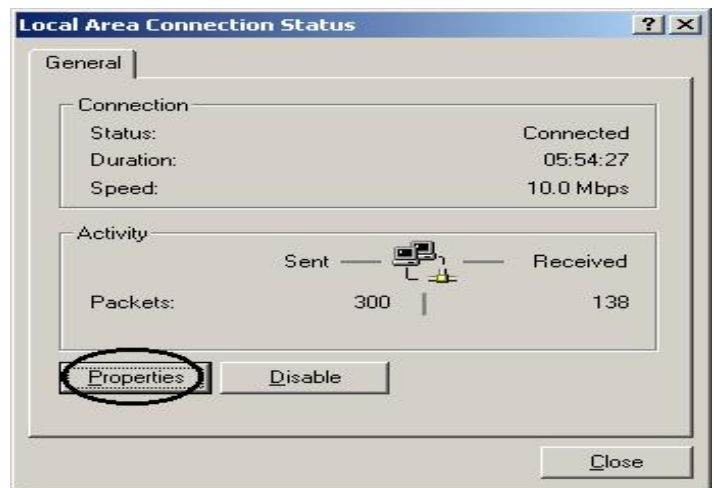


Configuring PC in Windows 2000

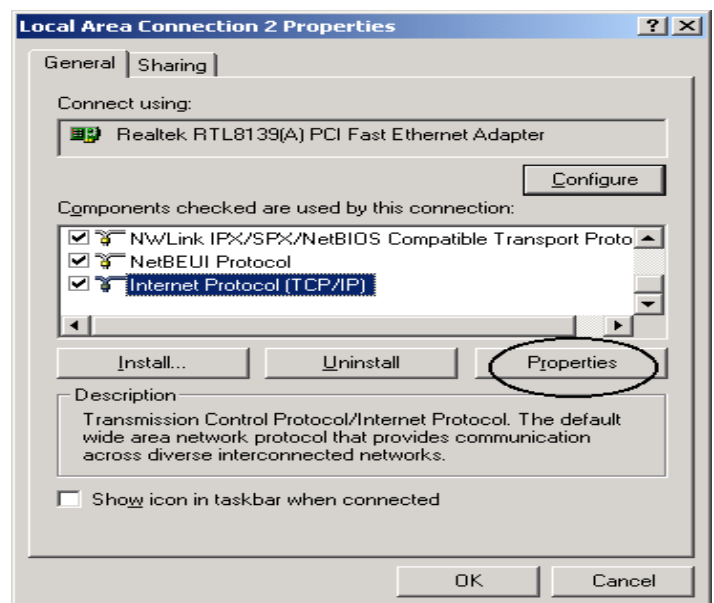
1. Go to **Start / Settings / Control Panel**. In the Control Panel, double-click on **Network and Dial-up Connections**.
2. Double-click **Local Area Connection**.



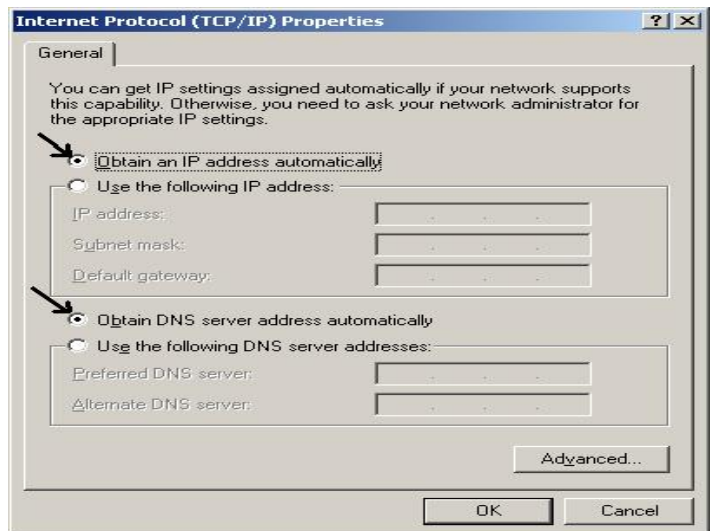
3. In the **Local Area Connection Status** window, click **Properties**.



4. Select **Internet Protocol (TCP/IP)** and click **Properties**.

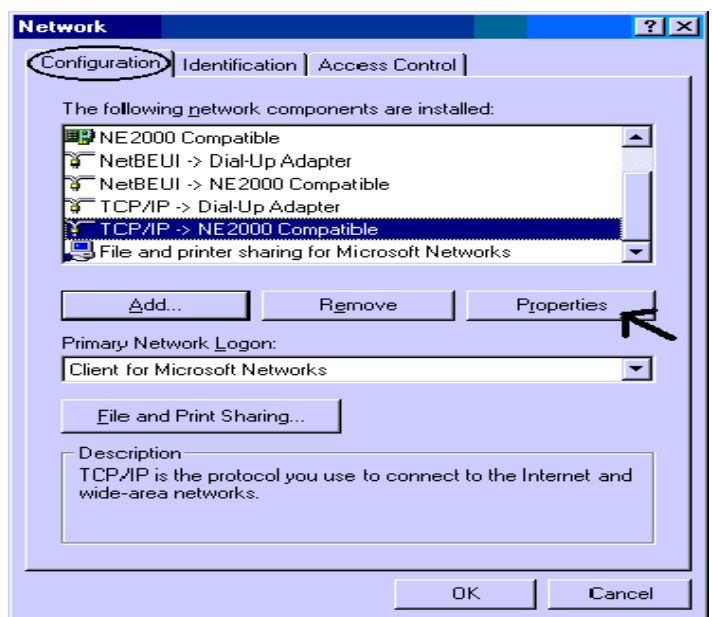


5. Select the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons.
6. Click **OK** to finish the configuration.

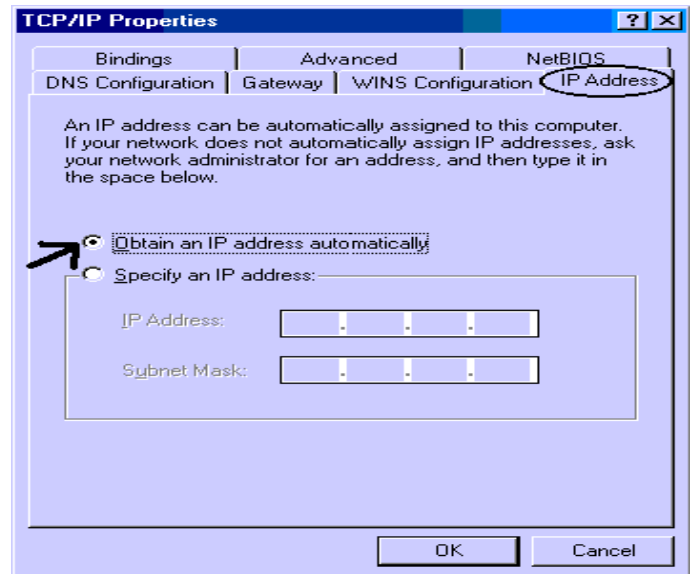


Configuring PC in Windows 95/98/ME

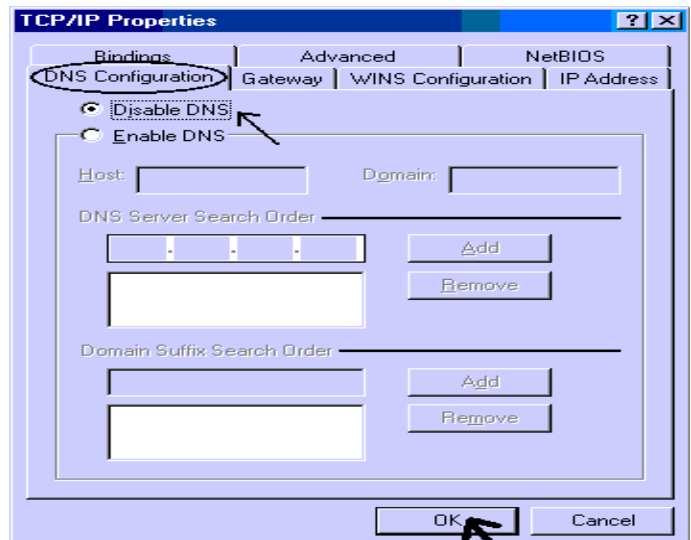
1. Go to **Start / Settings / Control Panel**. In the Control Panel, double-click on **Network** and choose the **Configuration** tab.
2. Select **TCP / IP -> NE2000 Compatible**, or the name of your Network Interface Card (NIC) in your PC.
3. Click **Properties**.



4. Select the **IP Address** tab. In this page, click the **Obtain an IP address automatically** radio button.

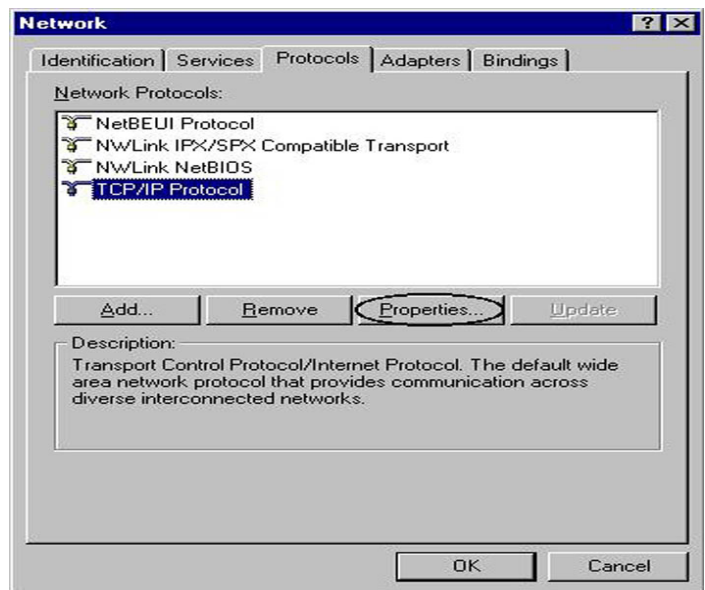


5. Then select the **DNS Configuration** tab.
6. Select the **Disable DNS** radio button and click **OK** to finish the configuration.

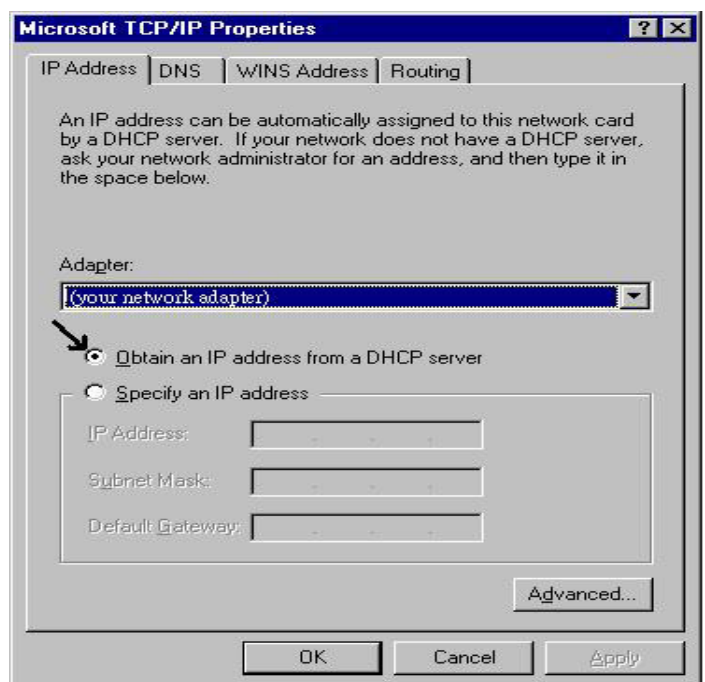


Configuring PC in Windows NT4.0

1. Go to **Start / Settings / Control Panel**. In the Control Panel, double-click on **Network** and choose the **Protocols** tab.
2. Select **TCP/IP Protocol** and click **Properties**.



3. Select the **Obtain an IP address from a DHCP server** radio button and click **OK**.



3.2 Factory Default Settings

Before you configure this device, you need to know the following default settings.

1. Web Configuration

Password: There are two levels of password protection, **Administrator Level** and **User Level**.

	User Name	Password
Administrator Level	admin	password
User Level	user	password

2. Device IP Network settings in LAN site

IP Address: 192.168.1.254
Subnet Mask: 255.255.255.0

3. ISP setting in WAN site

Virtual Circuit 0: 1483 Routed IP LLC

4. DHCP server

DHCP server is enabled.
IP address pool from IP Address: 192.168.1.100 to IP Address: 192.168.1.199

3.2.1 Password

The default username and password are admin and password respectively.



If you ever forget the password to log in, you may press the RESET button up to 2 seconds to restore the factory default settings.

3.2.2 LAN and WAN Port Addresses

The parameters of LAN and WAN ports are pre-set in the factory. The default values are shown below.

LAN Port		WAN Port
IP address	192.168.1.254	Obtain an IP address automatically. ISP assigns this IP address.
Subnet Mask	255.255.255.0	
DHCP server function	Enabled	
IP addresses for distribution to PCs	100 IP addresses continuing from 192.168.1.100 through 192.168.1.199 (Actually, it can supports up to 253 users.)	

3.3 Information from ISP

Before configuring this device, you have to check with your ISP (Internet Service Provider) what kind of service is provided such as PPPoE, PPPoA, RFC1483, IPoA, or PPTP-to-PPPoA Relaying.

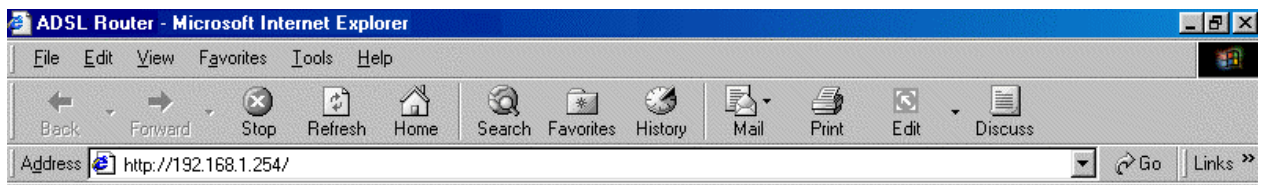
Gather the information as illustrated in the following table and keep it for reference.

PPPoE	VPI/VCI, VC-based/LLC-based multiplexing, Username, Password, Service Name, and Domain Name System (DNS) IP address (it can be automatically assigned by your ISP when you connect or be set manually).
PPPoA	VPI/VCI, VC-based/LLC-based multiplexing, Username, Password, and Domain Name System (DNS) IP address (it can be automatically assigned by your ISP when you connect or be set manually).
RFC1483 Bridged	VPI/VCI, VC-based/LLC-based multiplexing to use Bridged Mode.
RFC1483 Routed	VPI/VCI, VC-based/LLC-based multiplexing, IP address, Subnet mask, Gateway address, and Domain Name System (DNS) IP address (it is fixed IP address).
IPoA	VPI/VCI, VC-based/LLC-based multiplexing, IP address, Subnet mask, Gateway address, and Domain Name System (DNS) IP address (it is fixed IP address).

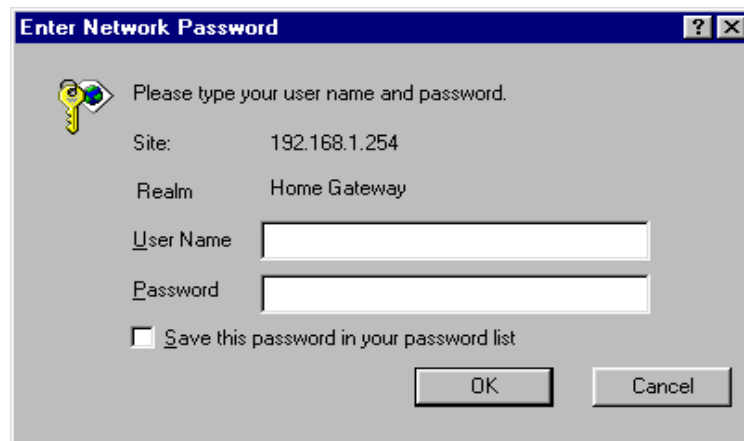
3.4 Configuring with Web Browser

The ADSL Modem/Router can be configured with your Web browser. The web browser is included as a standard application in following operation systems, UNIX, Linux, Mac OS, Windows 95/98/NT/2000/Me/XP, etc. The product provides a very easy and user-friendly interface for configuration.

Open the web browser, enter the local port IP address of the ADSL Router, which default at **192.168.1.254**, and click "**Go**" to get the login page.



There are two levels of password protection. The first level is for administrator and the second one is for user.



Enter Network Password

Please type your user name and password.

Site: 192.168.1.254

Realm: Home Gateway

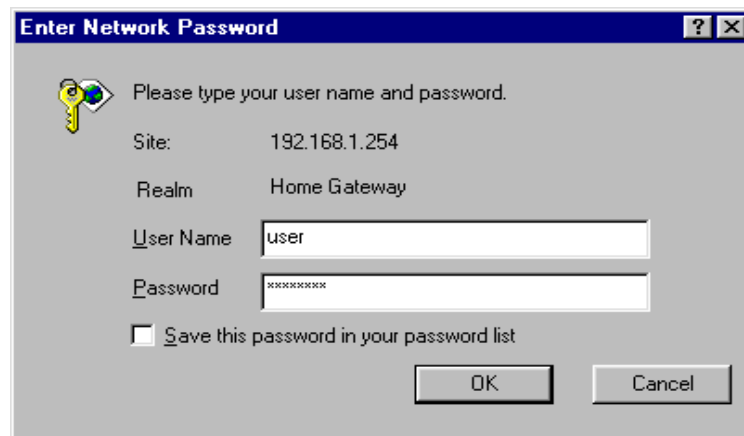
User Name:

Password:

☐ Save this password in your password list

OK Cancel

If you want to configure the device with administrator level, type **admin** in the username field and **password** in the password field. Then, click “OK” to log in. You can modify these passwords for security and management purpose.



Enter Network Password

Please type your user name and password.

Site: 192.168.1.254

Realm: Home Gateway

User Name:

Password:

☐ Save this password in your password list

OK Cancel

At the configuration homepage, the left navigation pane where bookmarks are provided links you directly to the desired setup page, including:

- **Quick Start**
- **Configuration** (LAN, WAN, Firewall, System, VPN, Virtual Server, Advanced and Help)
- **Status** (System Status, Device Info, System Logs, Security Logs, ARP Cache Table, DHCP Table, Routing Table and VPN Connect Status)

3.4.1 Status

The Status section provides and contains many items including device H/W and S/W information, LAN, WAN, Port status and all defined interfaces. It also provides useful information for users to review the status of device.

Status
Quick Start
Configuration
Save Config

System Status

Device Info

Firmware Version:	CX82xxx_4.1.0.19_IB340a
Customer Software Version:	4.1.0.19_MW2_IB340a

WAN

IP Address	Subnet Mask	MAC Address
192.168.241.101	255.255.255.0	00:04:ED:FF:00:0D

LAN

IP Address	Subnet Mask	MAC Address
192.168.1.254	255.255.255.0	00:04:ED:FF:00:0C

DHCP Clients

	IP Address	MAC Address
1	192.168.1.123	00:0D:88:18:53:91

[SAVE CONFIG](#)
[RESTART](#)

3.4.1.1 Status – ADSL Status

Displays the status of your ADSL connection. It will refresh every two seconds.

Status
ADSL Status
WAN Status
ATM Status
LAN Status
PPP Status
VPN Connect Status
Learned MAC Table
Routing Table
System Log
Security Log
Quick Start
Configuration
Save Config

ADSL Status

Information

Showtime Firmware Version	3.40
Line State	ACTIVATION
Modulation	N/A
Annex Mode	ANNEX_A
Startup Attempts	0
Max Tx Power	-38 dBm/Hz
CO Vendor	UNUSED_VENDOR_0
Elapsed Time	0 days 0 hours 0 minutes 50 seconds

	Downstream	Upstream	
SNR Margin	NA	NA	dB
Line Attenuation	NA	NA	dB
Errored Seconds	0	0	
Loss of Signal	0	0	
Loss of Frame	0	0	
CRC Errors	0	0	

[SAVE CONFIG](#)
[RESTART](#)

3.4.1.1.1 ADSL Status – WAN Status

Status	WAN Status		
ADSL Status	Select Virtual Circuit		
WAN Status	Virtual Circuit	0	Release
ATM Status	<input type="button" value="Execute"/>		
LAN Status	Information		
PPP Status	IP Address	Subnet Mask	MAC Address
VPN Connect Status	192.168.241.101	255.255.255.0	00:04:ED:FF:00:0D
Learned MAC Table			
Routing Table			
System Log			
Security Log			
Quick Start			
Configuration			
Save Config			
		<input type="button" value="SAVE CONFIG"/>	<input type="button" value="RESTART"/>

3.4.1.1.2 ADSL Status – ATM Status

Status	ATM STATUS		
ADSL Status	Statistic		
WAN Status		Transmit	Receive
ATM Status	Bytes	0	0
LAN Status	Cells	0	0
PPP Status	HEC Errors	N/A	0
VPN Connect Status	Mgmt Cells	0	0
Learned MAC Table	CLP0 Cells	0	0
Routing Table	CLP1 Cells	0	0
System Log	Errors	0	0
Security Log	Misrouted Cells	N/A	0
Quick Start	<input type="button" value="Reset Counters"/>		
Configuration			
Save Config			
		<input type="button" value="SAVE CONFIG"/>	<input type="button" value="RESTART"/>

3.4.1.2 Status – LAN Status

Displays the status of your Local Area Network (LAN) connection.

The screenshot displays the web interface of the Billion BIPAC 7100SG ADSL Modem/Router. On the left is a vertical navigation menu with the following items: Status, ADSL Status, LAN Status, TCP Status, PPP Status, VPN Connect Status, Learned MAC Table, Routing Table, System Log, Security Log, Quick Start, Configuration, and Save Config. The 'LAN Status' item is currently selected. The main content area on the right is titled 'LAN Status' and contains a table of network information. At the bottom right of the interface are two buttons: 'SAVE CONFIG' and 'RESTART'.

LAN Status		
Information		
IP Address	Subnet Mask	MAC Address
192.168.1.254	255.255.255.0	00:04:ED:FF:00:0C

3.4.1.2.1 LAN Status – TCP Status

- Status
- ADSL Status
- LAN Status
- TCP Status**
- PPP Status
- VPN Connect Status
- Learned MAC Table
- Routing Table
- System Log
- Security Log
- Quick Start
- Configuration
- Save Config

TCP Status

Statistic	
Total Packets Sent	3806
Data Packets Sent	2531
Data Bytes Sent	1820605
Total Packets Received	2970
Packets Received in-sequence	425
Bytes Received in-sequence	161831
Out of Order Packets	417
Out of Order Bytes	0
Packets discarded for bad checksum	0
Packets discarded for bad header offset	0
Packets discarded because too short	0
Connections Initiated	0
Connections Accepted	425
Connections	425

SAVE CONFIG
RESTART

3.4.1.3 Status- PPP Status

Displays the status of your PPP connection. It will refresh every ten seconds.

- Status
- ADSL Status
- LAN Status
- PPP Status**
- VPN Connect Status
- Learned MAC Table
- Routing Table
- System Log
- Security Log
- Quick Start
- Configuration
- Save Config

PPP Status

If a * appears under Mode column, you need to [check the WAN configuration](#) make sure the VC has the correct encapsulation.

Connection #

Connect

▼

Information

#	Connection Name	Interface	Mode	Status	Pkts Sent	Pkts Rcvd	Bytes Sent	Bytes Rcvd
---	-----------------	-----------	------	--------	-----------	-----------	------------	------------

SAVE CONFIG
RESTART

3.4.1.4 Status- VPN Connect Status

Through this page you can check connection status of Virtual Private Network (VPN).

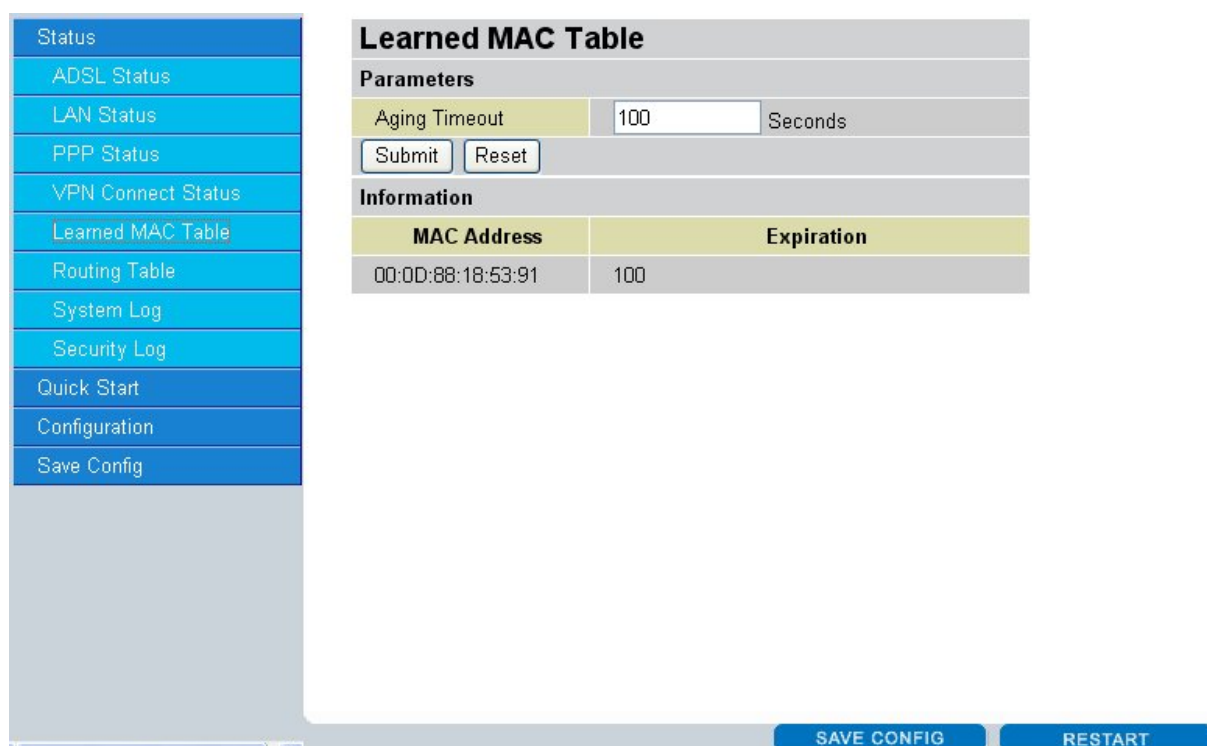
Once you setup your VPN tunnel the information of connection will show on this page.

The screenshot shows the web interface of the Billion BIPAC 7100SG ADSL Modem/Router. On the left is a vertical menu with the following items: Status, ADSL Status, LAN Status, PPP Status, VPN Connect Status (highlighted), Learned MAC Table, Routing Table, System Log, Security Log, Quick Start, Configuration, and Save Config. The main content area is titled "VPN Connect Status" and contains a "Parameters" section. This section includes a table with the following headers: Rule No, Remote Gateway, Remote network, Connect Type, Connect Time, Tx Packets, Rx Packets, and Connect Status. Below the table is a "Refresh time" dropdown menu set to "10 seconds" and a "Refresh" button. At the bottom right of the interface are two buttons: "SAVE CONFIG" and "RESTART".

Rule No	Remote Gateway	Remote network	Connect Type	Connect Time	Tx Packets	Rx Packets	Connect Status
Refresh time: 10 seconds <input type="button" value="Refresh"/>							

3.4.1.5 Status- Learned MAC Table

Aging Timeout: Enter the time period for the router to memorize MAC addresses.



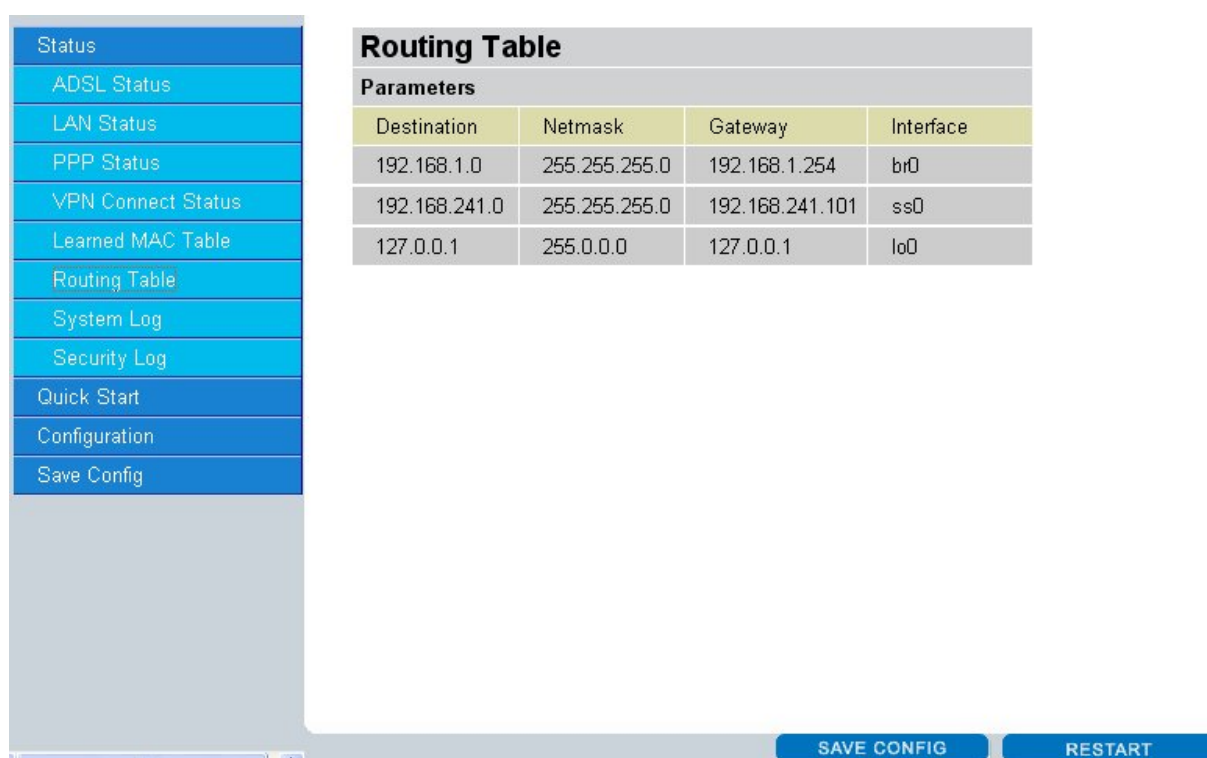
The screenshot shows the web interface of a BIPAC 7100SG router. On the left is a vertical menu with options: Status, ADSL Status, LAN Status, PPP Status, VPN Connect Status, Learned MAC Table (selected), Routing Table, System Log, Security Log, Quick Start, Configuration, and Save Config. The main content area is titled "Learned MAC Table". It has a "Parameters" section with an "Aging Timeout" field set to "100" and the unit "Seconds", with "Submit" and "Reset" buttons. Below this is an "Information" section containing a table:

MAC Address	Expiration
00:0D:88:18:53:91	100

At the bottom right of the interface are two buttons: "SAVE CONFIG" and "RESTART".

3.4.1.6 Routing Table

Display the current routing paths of BIPAC 7100SG.



The screenshot shows the web interface of a BIPAC 7100SG router. On the left is a vertical menu with options: Status, ADSL Status, LAN Status, PPP Status, VPN Connect Status, Learned MAC Table, Routing Table (selected), System Log, Security Log, Quick Start, Configuration, and Save Config. The main content area is titled "Routing Table". It has a "Parameters" section with a table:

Destination	Netmask	Gateway	Interface
192.168.1.0	255.255.255.0	192.168.1.254	br0
192.168.241.0	255.255.255.0	192.168.241.101	ss0
127.0.0.1	255.0.0.0	127.0.0.1	lo0

At the bottom right of the interface are two buttons: "SAVE CONFIG" and "RESTART".

3.4.1.7 System Log

Display the system logs cumulated till the present time. You can trace the historical information through this function.

System Log

Current Time: THU JAN 01 00:22:55 1970

If you would like to save the log to a text file, right click [here](#) and select "Save Target As ..." or "Save Link As ..."

```
01/01/1970 00:00:01> CfgMgr: 'WlanSec.dlz' module loaded.
01/01/1970 00:00:00> CfgMgr: 'Marconi.dlz' module loaded.
01/01/1970 00:00:00> CfgMgr: 'Washer.dlz' module loaded.
01/01/1970 00:00:00> CfgMgr: 'Upnp.dlz' module not found.
01/01/1970 00:00:00> No Static Session Information is
defined.
01/01/1970 00:00:00> NAT/NAPT Session Start: interface
ss0, WAN IP is 192.168.241.101
01/01/1970 00:00:00> CfgMgr: 'Shtm.dlz' module loaded.
```

☐ Clear Log

LOG MESSAGE: All

Submit Reset

SAVE CONFIG RESTART

3.4.1.8 Security Logs

Display the information of security logs. If hacker attacks your sever, he will be isolated by the firewall function and the router will record related information. Hence, you know where the hacker comes from.

Security Log

If you would like to save the log to a text file, right click [here](#) and select "Save Target As ..."

Clear Log

SAVE CONFIG RESTART

3.4.2 Quick Start

If you use this device to access the Internet through the ISP, this web page is enough for you to configure this router and access the Internet without a problem. Please check **Chapter 3.3** (*Information from the ISP*), then enter the proper values into this web page, click the **Apply** button and then click the **Save Config** button to save all of the configuration parameters to FLASH. After the router reboot, you may check the Status web page to check whether the router is connected to the ISP or not. In most cases, you can access the Internet immediately. If not, please refer to the sections below for more information.

Quick Start

Pvc 0

Per VC Settings

Virtual Circuit Enabled

Connection

Encapsulation 1483 Bridged IP LLC

Bridge Enabled

VPI 0

VCI 32

Static IP Settings

IP Address 192.168.241.101

Subnet Mask 255.255.255.0

Gateway 0.0.0.0

Account Setup

Username

Password

Automatic Reconnect ☒

Submit Reset

SAVE CONFIG RESTART

3.4.3 Configuration

When you click this item, you get following sub-items to configure BIPAC 7100SG.

LAN, WAN, Firewall, System, VPN, Virtual Server, Advanced and Help

3.4.3.1 WAN

The screens below contain settings for the WAN interface toward Internet.

Select Adapter

The screenshot displays the configuration interface for the BIPAC 7100SG. A left-hand menu lists various configuration sections, with 'WAN' currently selected. The main content area, titled 'Select Adapter', features a dropdown menu for selecting an adapter, currently set to 'Pvc 0', and a 'Submit' button. At the bottom right, there are 'SAVE CONFIG' and 'RESTART' buttons.

Select the item of **PVCs** you want to configure. Then, press the **Submit** button.

Status	WAN Configuration	
Quick Start	Pvc 0 Change Adapter	
Configuration	Virtual Circuit	
WAN	Virtual Circuit	Enabled <input type="button" value="v"/>
LAN	Bridge	Enabled <input type="button" value="v"/>
Wireless	IGMP	Disabled <input type="button" value="v"/>
System	Encapsulation	1483 Bridged IP LLC <input type="button" value="v"/>
Firewall	ATM	
VPN	VPI	0
Virtual Server	VCI	32
Advanced	Service Category	UBR <input type="button" value="v"/>
Save Config	Peak Cell Rate	0 kbps
	Sustainable Cell Rate	0 kbps
	Max Burst Size	0
	DHCP Client	
	DHCP Client	Disabled <input type="button" value="v"/>
	Host Name	
	MAC Spoofing	
	MAC Spoofing	Disabled <input type="button" value="v"/>
	Mac Address	00:00:00:00:00:00
	Static IP Settings	
	IP Address	192.168.241.101
	Subnet Mask	255.255.255.0
	Gateway	0.0.0.0
	PPP	
	PPP	Advanced PPP configuration
	Service Name	
	Username	
	Password	
	Disconnect Timeout	0 minutes (Max:32767)
	MRU	1492
	MTU	1492
	MSS	1432
	Lcp Echo Interval	10 seconds
	Lcp Echo Maximum Consecutive Failure	6
	Authentication	Auto <input type="button" value="v"/>
	Automatic Reconnect	<input type="checkbox"/> PPP Disconnect Timer Config
	<input type="button" value="Submit"/> <input type="button" value="Reset"/>	
	<input type="button" value="SAVE CONFIG"/> <input type="button" value="RESTART"/>	

Virtual Circuit

Virtual Circuit: Enable/Disable the settings of this VC.

Bridge: If you set this device to be bridge mode, select Enable; if not, please select Disable.

IGMP: You can Enable or Disable this function.

Encapsulation: There are eleven ways — PPPoE VC-Mux, PPPoE LLC, PPPoE None, PPPoA VC-Mux, PPPoA LLC, 1483 Bridged IP VC-Mux, 1483 Bridged IP LLC, 1483 Routed IP VC-Mux, 1483 Routed IP LLC, Classical IP over ATM, Native ATM — for the device to have a public IP address and then to access Internet. You have to check with your ISP about which way is adopted. **VPI:** Consult the telephone company to get the Virtual Path Identifier (VPI) number. The default value is 0.

ATM

VPI: Consult the telephone company to get the Virtual Path Identifier (VPI) number. The default value is 0.

VCI: Consult the telephone company to get the Virtual Channel Identifier (VCI) number. The default value is 32.

Service Category: Select **UBR** or **CBR**.

DHCP Client

DHCP Client: Check to enable the DHCP client function if you want the device to get an IP address automatically from your ISP.

Host Name: Enter the name of your work group.

MAC Spoofing

MAC Spoofing: The MAC Spoofing is for solving the scenario when the ISP only recognizing the specified MAC address.

Static IP Settings

IP Address: Enter the information provided by your ISP.

Subnet Mask: Enter the information provided by your ISP.

Default Gateway: Enter the gateway address provided by your ISP.

PPP

If your encapsulation is set to be PPPoE or PPPoA, the following fields must be entered.

Service Name: This item is for identification purpose. If it is required, your ISP will provide you the information. Maximum input is 31 alphanumeric characters.

Username: Enter the username provided by your ISP.

Password: Enter the password provided by your ISP.

Disconnect Timeout ☐ **seconds:** Auto-disconnect the ADSL Router when there is no activity on the line for a predetermined period of time. You can input any number from 0 to 32767. The default value is 0 seconds.

MRU: Maximum Receive Unit indicates the peer of PPP connection the maximum size of the PPP information field this device can be received. The default value is 1492 and is used in the beginning of the PPP negotiation. In the normal negotiation, the peer will accept this MRU and will not send packet with information field larger than this value.

MTU: Maximum Transmission Unit indicates the network stack of any packet is larger than this value will be fragmented before the transmission. During the PPP negotiation, the peer of the PPP connection will indicate its MRU and will be accepted. The actual MTU of the PPP connection will be set to the smaller one of MTU and the peer's MRU. The default value is 1492.

MSS: Maximum Segment Size is the largest size of data that TCP will send in a single IP packet. When a connection is established between LAN client and a host in the WAN side, the LAN client and the WAN host will indicate their MSS during the TCP connection handshake. The default value is 1492.

Authentication: Default at "Auto".

Automatic Reconnect: Check to enable this device to automatically re-establish the PPPoE session when disconnected by ISP.

3.4.3.2 LAN

This screen contains settings for LAN interface attached to the LAN port.

LAN Configuration	
Device IP address	
IP Address	192.168.1.254
Subnet Mask	255.255.255.0
DHCP Server	
DHCP Server	Enabled <input type="button" value="v"/>
DHCP address pool selection	User Defined <input type="button" value="v"/>
User Defined Start Address	192.168.1.100
User Defined End Address	192.168.1.199
DHCP Gateway Selection	Automatic <input type="button" value="v"/>
User Defined Gateway Address	
Lease Time	1 days 0 hours 0 minutes 0 seconds
DHCP Relay	Disabled <input type="button" value="v"/>
DHCP Relay Target IP	0.0.0.0
User Mode	Multi-User <input type="button" value="v"/>
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

Device IP Address

IP Address: Default at 192.168.1.254.

This is the device IP address in LAN site. If you plan to change it to another IP address to a different range of IP subnet. Please make sure your PC is also located at the same IP subnet. Otherwise, you may not be able to access the router.

Subnet Mask: Default at 255.255.255.0.

DHCP Server

DHCP Server: Check DHCP Server to enable the router to distribute IP Addresses, subnet mask and DNS setting to computers. Hence, the following fields will be activated. If you do not check this selection, remember to specify a static IP address, subnet Mask, and DNS setting for each of your local computers. Be careful not to assign the same IP address to different computers.

DHCP address pool selection: Auto or User Defined. If select the AUTO, router will assign an IP address back to PC's IP request. If User Defined, please specify the IP pool range.

User Defined Start Address: Enter the start address of this local IP network address pool. The pool is a piece of continuous IP address segment. The default value is 192.168.1.100.

User Defined End Address: Enter the last address of this local IP network address pool that you want the DHCP server to assign IP addresses to. The default value is 192.168.1.199.

With this case, the DHCP pool is from 192.168.1.100 to 192.168.1.199. Therefore, the local computer will get an IP address located at this range randomly.

Lease Time: Set the lease time you required.

User Mode: There are two selections, Single User and Multi-User, for this setting.

3.4.3.3 Wireless

3.4.3.3.1 Basic setting

The screenshot shows the 'Wireless' configuration page of the Billion BIPAC 7100SG ADSL Modem/Router. On the left is a navigation menu with options: Status, Quick Start, Configuration, WAN, LAN, Wireless, Basic setting, Advanced setting, WLAN Security, System, Firewall, VPN, Virtual Server, Advanced, and Save Config. The 'Wireless' section is active, showing the following settings:

- WLAN Driver(Marconi) : v3.0.5
- Boot Loader Version : v3.1.1
- Upper MAC Version : M_UM_3.1.20
- Lower MAC Version : M2_LM_D2959SC_3.1.41
- AP BSSID: 00:04:ED:FF:00:0F
- SSID: Billion
- Channel: 6
- Security: ☐ Enable Encryption ☒ Disable Encryption
- Key Length: ☒ 64 bit ☐ 128 bit
- Auth Type: Open System (The Passphrase should be fewer than 16 characters. You may manually enter you HEX key below and leave Passphrase blank)
- Passphrase: (5 bytes for 64 bit or 13 bytes for 128 bit)
- Key 0: ☒ c6774663dd
- Key 1: ☐ af6bd13ecd
- Key 2: ☐ 8e33fb2bfl
- Key 3: ☐ cf12611e1d
- Secret Key: ☐ Disable

At the bottom right, there are two buttons: 'SAVE CONFIG' and 'RESTART'.

SSID : Enter the unique ID given to the Access Point (AP) built in the wireless broadband firewall gateway. To connect to this device, your wireless clients must have the same SSID as that of this device.

Channel : Select the ID of channel you would like to use.

Security: Select Enable or Disable the function of Encryption to establish more secure environment for wireless data transmission.

Encryption Key: Enter the key to encrypt wireless data. To allow encrypted data transmission, the WEP Encryption Key values on all wireless stations must be the same as that of the device.

3.4.3.3.2 Advanced setting

Advanced wireless configuration page enables you to select Basic Rate and TX Rate.

Multiple choices are available in this part from at least 1M to 54M maximum.

Advanced Wireless Configuration Page	
Parameters	
Wireless	802.11G
Beacon Interval (1-4095)	100 msec
DTIM Interval (1-65535)	1 beacons
Fragmentation Threshold (256-2346)	2346 (even number only)
RTS Threshold (0-3000)	2342
Basic Rate	<input checked="" type="checkbox"/> 1M <input checked="" type="checkbox"/> 2M <input checked="" type="checkbox"/> 5.5M <input type="checkbox"/> 6M <input type="checkbox"/> 9M <input checked="" type="checkbox"/> 11M <input type="checkbox"/> 12M <input type="checkbox"/> 18M <input type="checkbox"/> 24M <input type="checkbox"/> 36M <input type="checkbox"/> 48M <input type="checkbox"/> 54M
Support/TX Rate	<input checked="" type="checkbox"/> 1M <input checked="" type="checkbox"/> 2M <input checked="" type="checkbox"/> 5.5M <input type="checkbox"/> 6M <input type="checkbox"/> 9M <input checked="" type="checkbox"/> 11M <input checked="" type="checkbox"/> 12M <input checked="" type="checkbox"/> 18M <input checked="" type="checkbox"/> 24M <input checked="" type="checkbox"/> 36M <input checked="" type="checkbox"/> 48M <input checked="" type="checkbox"/> 54M
Preamble	Long/Short Preamble
Adjacent Network Protection	Disabled
Channel Protection	CTS to Self
Dynamic Antenna Switching	Disabled
BSS Slot Time	Short
<input type="button" value="Submit"/>	
<input type="button" value="SAVE CONFIG"/> <input type="button" value="RESTART"/>	

3.4.3.3.3 WLAN Security

This session provides the setup function of WPA mode. You can enable or disable the Wi-Fi Protected Access (WPA) to assure your wireless environment is under protection.

Status	<h3>Wi-Fi Protected Access (WPA)</h3> <table><tr><td colspan="2">Parameters</td></tr><tr><td>Firmware Version</td><td>CX_WLANSEC_4.2.0</td></tr><tr><td>WPA Mode</td><td>Enable</td></tr><tr><td>Network Authentication</td><td>WPA Pre-Shared Key</td></tr><tr><td>Data Encryption</td><td>TKIP</td></tr><tr><td>WPA Pre-Shared Key</td><td>*****</td></tr><tr><td>WPA Group Rekey Interval</td><td>0 seconds</td></tr><tr><td>RADIUS Server Address</td><td>0.0.0.0</td></tr><tr><td>RADIUS Server Port</td><td>1812</td></tr><tr><td>RADIUS Shared Secret</td><td>****</td></tr><tr><td>Submit</td><td>Reset</td></tr></table>	Parameters		Firmware Version	CX_WLANSEC_4.2.0	WPA Mode	Enable	Network Authentication	WPA Pre-Shared Key	Data Encryption	TKIP	WPA Pre-Shared Key	*****	WPA Group Rekey Interval	0 seconds	RADIUS Server Address	0.0.0.0	RADIUS Server Port	1812	RADIUS Shared Secret	****	Submit	Reset
Parameters																							
Firmware Version		CX_WLANSEC_4.2.0																					
WPA Mode		Enable																					
Network Authentication		WPA Pre-Shared Key																					
Data Encryption		TKIP																					
WPA Pre-Shared Key		*****																					
WPA Group Rekey Interval		0 seconds																					
RADIUS Server Address		0.0.0.0																					
RADIUS Server Port		1812																					
RADIUS Shared Secret		****																					
Submit		Reset																					
Quick Start																							
Configuration																							
WAN																							
LAN																							
Wireless																							
Basic setting																							
Advanced setting																							
WLAN Security																							
System																							
Firewall																							
VPN																							
Virtual Server																							
Advanced																							
Save Config																							

SAVE CONFIGRESTART

3.4.3.4 System

There are five items under the **System** section: Password, Time Zone, Upgrade, Factory Setting and Restart.

3.4.3.4.1 Password

In factory setting, the default password is **password**, and that for user is also password. You can change the default password to ensure that someone cannot adjust your settings without your permission. Every time you change your password, please record the password and keep it at a safe place.

Please note that the minimum input for password is **8** alphanumeric characters long. Since it is **case sensitive**, be sure that you remember whether a letter is in upper or lower case and make sure that your Caps Lock is off. Moreover, please do not use the sign "&" in the passwords.

Status	<h3>Admin Level Username/Password Configuration</h3> <p>The password for Admin should be at least 8 characters. Do not use '&' in the password.</p> <table> <tr> <td>Current Password</td> <td><input type="text"/></td> </tr> <tr> <td>Admin Level Username</td> <td>admin</td> </tr> <tr> <td>Admin Level Password</td> <td><input type="text"/></td> </tr> <tr> <td>Retype Password</td> <td><input type="text"/></td> </tr> <tr> <td colspan="2"> <input type="button" value="Submit"/> <input type="button" value="Cancel"/> </td> </tr> </table>	Current Password	<input type="text"/>	Admin Level Username	admin	Admin Level Password	<input type="text"/>	Retype Password	<input type="text"/>	<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	
Current Password		<input type="text"/>									
Admin Level Username		admin									
Admin Level Password		<input type="text"/>									
Retype Password		<input type="text"/>									
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>											
Quick Start											
Configuration											
WAN											
LAN											
Wireless											
System											
Password											
Admin											
User											
Time Zone											
Upgrade											
Factory Setting											
Restart											
Firewall											
VPN											
Virtual Server											
Advanced											
Save Config											

Status	<h3>User Level Username/Password Configuration</h3> <p>Do not use '&' in the password.</p> <table> <tr> <td>Current Password</td> <td><input type="text"/></td> </tr> <tr> <td>User level Username</td> <td>user</td> </tr> <tr> <td>User Level Password</td> <td><input type="text"/></td> </tr> <tr> <td>Retype Password</td> <td><input type="text"/></td> </tr> <tr> <td colspan="2"> <input type="button" value="Submit"/> <input type="button" value="Cancel"/> </td> </tr> </table>	Current Password	<input type="text"/>	User level Username	user	User Level Password	<input type="text"/>	Retype Password	<input type="text"/>	<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	
Current Password		<input type="text"/>									
User level Username		user									
User Level Password		<input type="text"/>									
Retype Password		<input type="text"/>									
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>											
Quick Start											
Configuration											
WAN											
LAN											
Wireless											
System											
Password											
Admin											
User											
Time Zone											
Upgrade											
Factory Setting											
Restart											
Firewall											
VPN											
Virtual Server											
Advanced											
Save Config											

3.4.3.4.2 Time Zone

BIPAC 7100SG does not have a real time clock on board; instead, it uses the simple network time protocol (SNTP) to get the current time from the SNTP server in outside network. Please choose your local time zone and click Submit. You will get the correct time information after you really establish a connection to Internet. The current time of selected time zone will be shown in the Status – System window.

The screenshot shows the 'Time Zone' configuration page. On the left is a vertical menu with options: Status, Quick Start, Configuration, WAN, LAN, Wireless, System, Password, Time Zone (selected), Upgrade, Factory Setting, Restart, Firewall, VPN, Virtual Server, Advanced, and Save Config. The main content area is titled 'Time Zone' and contains the following fields:

- Choose your local time zone:** A section header.
- ☐ Automatically adjust clock for daylight saving changes
- Time Zone:** A dropdown menu showing '(GMT-08:00) Pacific Time (US & Canada); Tijuana'.
- SNTP Server IP Address:** An empty text input field.
- Resync Poll Interval:** A text input field containing '30' followed by the text 'minutes' and a 'Sync Now !' button.
- Buttons:** 'Submit' and 'Cancel' buttons.

At the bottom right of the page are two buttons: 'SAVE CONFIG' and 'RESTART'.

Automatically adjust clock for daylight saving changes: It is optional for different time zone area.

SNTP Server IP Address: Specify the IP address if you want to use your familiar SNTP server.

3.4.3.4.3 Upgrade

The screenshot shows the 'Upgrade' page. On the left is a vertical menu with options: Status, Quick Start, Configuration, WAN, LAN, Wireless, System, Password, Time Zone, Upgrade (selected), Factory Setting, Restart, Firewall, VPN, Virtual Server, Advanced, and Save Config. The main content area is titled 'Upgrade' and contains the following text and button:

Click Image Download to start a Code Image Update. After Image Download is clicked, it will take a few seconds before you can select the file to be downloaded.

Image Download

At the bottom right of the page are two buttons: 'SAVE CONFIG' and 'RESTART'.

To upgrade the firmware of BIPAC 7100SG, you should download or copy the firmware to your local environment first. Press the **“Browse...”** button to specify the path of the firmware file. Then, click **“Upgrade”** to start upgrading. When the procedure is completed, BIPAC 7100SG will reset automatically to make the new firmware work.

3.4.3.4.4 Factory Setting

If for any reason, you have to reset this router back to factory default settings, be careful that the current settings will be lost and the settings are reset back to its default value. The factory default values is detailed in the **section 3.2 “Factory Default Settings”**.

3.4.3.4.5 Restart

In case the router stops responding correctly or in some other way stops functioning, you can perform the restart. Your setting won't be changed. Performing the restart, click on the **Submit** button.

The screenshot displays the web interface of the Billion BIPAC 7100SG ADSL Modem/Router. On the left is a vertical navigation menu with the following items: Status, Quick Start, Configuration, WAN, LAN, Wireless, System, Password, Time Zone, Upgrade, Factory Setting, Restart, Firewall, VPN, Virtual Server, Advanced, and Save Config. The 'Restart' item is highlighted. The main content area is titled 'Restart' and contains the instruction 'Reboot modem without saving settings.' Below this instruction is a 'Submit' button. At the bottom right of the interface, there are two buttons: 'SAVE CONFIG' and 'RESTART'.

3.4.3.5 Firewall

User can decide to enable this firewall function including Packet Filter, Block Hacker Attack, and Block WAN request features for better security control or not. But be noted, it wastes network processor computation power. The performance will be lower about 10% to 15%. More firewall features will be added continually, please visit our web site to download latest firmware.

3.4.3.5.1 Packet Filter

Packet filtering function enables you to configure your router to check specified internal/external user (**IP address**) from Internet access, or you can disable specific service request (**Port number**) to /from Internet. This configuration program allows you to set up different filter rules up to 10 for different users based on their IP addresses or their network Port number. The relationship among all filters is “**or**” operation, which means the device checks these different filter rules one by one, stating from the first rule. As long as one of the rules is satisfied, the specified action will be taken.

Packet Filtering										
Parameters										
Rule No.	Active	Flow	Packet Type	Action	Source IP		Source Port		Destination IP	
					from	to	from	to	from	to
<input type="button" value="Add"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>					No rule, please add your rule ▼					

Add: Click this button to add a new packet filter rule. After click, next figure will appear.

Edit: Check the Rule No. you want to edit. Then, click the “Edit” button.

Delete: Check the Rule No. you want to delete. Then, click the “Delete” button.

Packet Filter									
Parameters									
Rule1	<input checked="" type="radio"/> Outgoing <input type="radio"/> Incoming								
Active	Yes ▼		Packet Type	Any ▼					
Log	Yes ▼		Action When Matched	Drop ▼					
Source IP Address					Destination IP Address				
From	<input type="text"/>			From	<input type="text"/>				
To	<input type="text"/>			To	<input type="text"/>				
Source Port					Destination Port				
From	<input type="text"/>			From	<input type="text"/>				
To	<input type="text"/>			To	<input type="text"/>				
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>									

⊙ **Outgoing** ⊙ **Incoming:** Determine whether the rule is for outgoing packets or for incoming packets.

Active: Choose "Yes" to enable the rule, or choose "No" to disable the rule.

Packet Type: Specify the packet type (TCP, UDP, ICMP or any) that the rule will be applied to.

Select **TCP** if you want to scope for the connection-based application service on the remote server using the port number. Or select **UDP** if you want to scope for the connectionless application service on the remote server using the port number.

Log: Choose "Yes" if you want to generate logs when the filter rule is applied to a packet.

Action When Matched: If any packet matches this filter rule, **Forward** or **Drop** this packet.

Source IP Address: Enter the incoming or outgoing packet's source IP address(es).

Source Port: Check the TCP or UDP packet's source port number(s).

Destination IP Address: Enter the incoming or outgoing packet's destination IP address(es).

Destination Port: Check the TCP or UDP packet's destination port number(s).



If the DHCP server option is enabled, you have to be very careful in assigning the IP addresses of filtered private IP range in order to avoid conflicts because you do not know which PC in LAN is assigned to which IP address. The easiest and safest way is that the filtered IP address is assigned to specific PC that is not allowed to access outside resource such as Internet. You configure the filtered IP address manually to this PC, but it is still in the same subnet with the router.

3.4.3.5.2 MAC Filtering

The screenshot shows the 'MAC Filtering' configuration page. On the left is a vertical menu with options: Status, Quick Start, Configuration, WAN, LAN, Wireless, System, Firewall, Packet Filtering, MAC Filtering (selected), Intrusion Detection, Block WAN Request, URL Blocking, VPN, Virtual Server, Advanced, and Save Config. The main content area is titled 'MAC Filtering' and contains a 'Parameters' section with two rows: 'Bridge Filtering' with radio buttons for 'Enable' and 'Disable' (selected), and 'Filtering Action' with radio buttons for 'Block' and 'Forward' (selected). Below this is a table with columns: ID, Source Mac, Destination MAC, TYPE, and an 'Add' button. The table is currently empty. At the bottom of the page are two buttons: 'SAVE CONFIG' and 'RESTART'. Below the table, there are three footnotes: (1) MAC address format : aabbccddeeff, 000000000000 indicates DONT CARE; (2) Ethernet type format: aabb, 0000 indicates DONT CARE; (3) The maximum number of entries is 16.

ID	Source Mac	Destination MAC	TYPE	
				Add

(1) MAC address format : aabbccddeeff, 000000000000 indicates DONT CARE
(2) Ethernet type format: aabb, 0000 indicates DONT CARE
(3) The maximum number of entries is 16

Enable Bridge Filtering: Check **Yes** to enable this function or check **No** to disable.

Src MAC: Enter the source MAC address.

Dest MAC: Enter the destination MAC address.

Type: Enter the Ethernet type.

☐ **Block** ☐ **Forward:** Check **Block** if you want to block requests from the source MAC address sending to the destination MAC address. Check **Forward** if you want to forward requests from the source MAC address sending to the destination MAC address.

3.4.3.5.3 Intrusion Detection

Check "Enable" if you want to detect invader sneak in your computer without permitted .The ADSL Router can automatically detect and block the DoS (Denial of Service) attack if user enables this function. This kind of attack is not to achieve the confidential data of this network; instead, it aims to crush specific equipment or the entire network. If this happens, the users will not be able to access the network resources. There are few samples of hacker patterns implemented as below.

- **IP Spoofing**
- **Ping of Death (Length > 65535)**
- **Land Attack (Same source / destination IP address)**
- **IP with zero length**
- **Sync flooding**
- **Smurf Attack (ICMP Echo with x.x.x.0 or x.x.x.255)**
- **Snork Attack**
- **UDP port loop-back**
- **TCP NULL scan**

Status	Intrusion Detection Parameters <table border="1"><tr><td>Intrusion Detection</td><td><input type="radio"/> Enable <input checked="" type="radio"/> Disable</td></tr><tr><td>Alert Mail</td><td><input type="checkbox"/> Enable</td></tr><tr><td>Your E-mail</td><td><input type="text"/></td></tr><tr><td>Recipient's E-mail</td><td><input type="text"/></td></tr><tr><td>SMTP Server</td><td><input type="text"/></td></tr><tr><td colspan="2"><input type="button" value="Submit"/> <input type="button" value="Cancel"/></td></tr></table>	Intrusion Detection	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	Alert Mail	<input type="checkbox"/> Enable	Your E-mail	<input type="text"/>	Recipient's E-mail	<input type="text"/>	SMTP Server	<input type="text"/>	<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	
Intrusion Detection		<input type="radio"/> Enable <input checked="" type="radio"/> Disable											
Alert Mail		<input type="checkbox"/> Enable											
Your E-mail		<input type="text"/>											
Recipient's E-mail		<input type="text"/>											
SMTP Server		<input type="text"/>											
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>													
Quick Start													
Configuration													
WAN													
LAN													
Wireless													
System													
Firewall													
Packet Filtering													
Bridge Filtering													
Intrusion Detection													
Block WAN Request													
URL Blocking													
VPN													
Virtual Server													
Advanced													
Save Config													
<div>SAVE CONFIG RESTART</div>													

3.4.3.5.4 Block WAN Request

Check "Enable" if you want to exclude outside PING request from reaching on this router.

Status	Block WAN Request Parameters <table border="1"><tr><td>Block WAN Request</td><td><input type="radio"/> Enable <input checked="" type="radio"/> Disable</td></tr><tr><td colspan="2"><input type="button" value="Submit"/> <input type="button" value="Cancel"/></td></tr></table>	Block WAN Request	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	
Block WAN Request		<input type="radio"/> Enable <input checked="" type="radio"/> Disable			
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>					
Quick Start					
Configuration					
WAN					
LAN					
Wireless					
System					
Firewall					
Packet Filtering					
Bridge Filtering					
Intrusion Detection					
Block WAN Request					
URL Blocking					
VPN					
Virtual Server					
Advanced					
Save Config					
<div>SAVE CONFIG RESTART</div>					

3.4.3.5.5 URL Blocking

URL Blocking

Parameters

Selection ☒ Disable ☐ Enable

☒ Always Block

☐ Block From 00 : 00 to 00 : 00 Sunday to Sunday

☐ [Use Domains Filtering](#)

☐ [Use Keyword Filtering](#)

☐ Disable all web traffic except for Trusted Domains

URL blocking function enables you to avoid your LAN PCs from accessing some URLs. You must check the “**Enable**” radio button to make the following figure appear for further configuration.

Always Block: Check this will block all browsing requests from PCs

Block: to specify the time period when you want this function activated. But be noted that SNTP (Time Zone) function must WORK.

Keyword Filtering: Check if you want to enable the Keyword Filtering function and click the hyper link to enter further configuration.

Use Domain Filtering: Check if you want to enable the Domain Filtering function and click the hyper link to enter further information.

3.4.3.6 VPN (Virtual Private Networks)

we will introduce the VPN settings to establish a secure communication path with remote site based on IPsec. Please check “Enable” and click “Add” button. Then you will see IKE Setup page as below figure. Then, you can configure the rule as your security plan.

Active: To enable this VPN tunnel setting or not.

Remote Gateway IP or Host Name: the public IP address or host name of remote VPN device. For example, it may be jet.dyndns.org (If remote IP is not fixed.) or 210.243.142.29.

Remote Subnet: The IP subnet of remote LAN environment, network ID. For example, it is 192.168.4.0

Remote Subnet Mask: The range of remote IPs can be communicated. For example, it is 255.255.255.0.

Proposal: There are two methods to check the authentication information, AH (authentication header) and ESP (Encapsulating Security Payload).

ESP: Data will be encrypted and/or authentic. DES and 3DES encryption methods are supported. The DES uses 56 bits as an encryption method. The 3DES uses 128 bits as an encryption method. MD5 and SHA1 authentication protocols are supported. The authentication keys are a string and must be exactly 16 characters long for MD5 and 20 characters long for SHA1. The ESP can be one of following proposals:

.ESP: DES without Authentication

.ESP: 3DES without Authentication

.ESP: DES with MD5

.ESP: DES with SHA-1

.ESP: 3DES with MD5

ESP: 3DES with SHA-1

.ESP: MD5 without Encryption

.ESP: SHA-1 without Encryption

AH: Data will be authentic only. MD5 and SHA1 authentication protocols are supported. The authentication keys are a string and must be exactly 16 characters long for MD5 and 20 characters long for SHA1.

PreShared Key: IKE authentication method. This is a string from 8 characters to 128 characters. Both sides should use the same key.

Advanced IKE Setup: Press "Advanced IKE Setup" button, you will see Advanced IKE Setup page as below figure. Then, you can configure the parameters of IKE.

3.4.3.7 Virtual Server

Status	Virtual Server Configuration						
Quick Start	Use the following form to add special port that you want to be opened for your special						
Configuration	ID	Public Port (From)	Public Port (To)	Port Type	Map To	Host IP Address	Private Port
WAN	1			<input checked="" type="radio"/> TCP <input type="radio"/> UDP	---		
LAN	Information						
Wireless	ID	Public Port (From)	Public Port (To)	Port Type	Map To	Host IP Address	Private Port
System							
Firewall							
VPN							
Virtual Server							
Advanced							
Save Config							

Being a natural Internet firewall, the ADSL Router protects your network from being accessed by outside users. When it needs to allow outside users to access internal servers, e.g. Web server, FTP server, E-mail server or News server, this product can act as a virtual server. You can set up a local server with specific port number that stands for the service, e.g. Web (80), FTP (21), Telnet (23), SMTP (25), POP3 (110), DNS (53), ECHO (7), NNTP (119). When an incoming access request to the router for specified port is received, it will be forwarded to the corresponding internal server.

For example, if you set the Public Port number 21 (FTP) to be mapped to the IP Address 192.168.1.100, then all the ftp requests from outside users will be forwarded to the local server with IP address of 192.168.1.100.

Virtual Server Configuration							
Use the following form to add special port that you want to be opened for your special applic							
ID	Public Port (From)	Public Port (To)	Port Type	Map To	Host IP Address	Private Port	
4			<input checked="" type="radio"/> TCP <input type="radio"/> UDP	--->			
Information							
ID	Public Port (From)	Public Port (To)	Port Type	Map To	Host IP Address	Private Port	
1	21	21	TCP	--->	192.168.1.50		*
2	80	80	TCP	--->	192.168.1.100		*
3	23	23	UDP	--->	192.168.1.150		*

SAVE CONFIG RESTART

Public Port (from) & Port (To): Enter the public port number & range you want to configure.

Port Type: Select **TCP** if you want to scope for the connection-based application service on the remote server using the port number. Or select **UDP** if you want to scope for the connectionless application service on the remote server using the port number.

Host IP Address: Enter the IP address of certain internal server to which requests from the specified port is forwarded.

3.4.3.8 Advanced

There are eight items under the **Advanced** section: ADSL, DNS, Dynamic DNS, NAT, RIP, Static Routing, MISC Configuration and Diagnostic Test.

3.4.3.8.1 ADSL

Trellis: Default at Enabled.

Handshake Protocol: Default at Autosense – G.dmt first. You can also choose other protocols, such as Autosense – T1.413 first, G.dmt/G.lite, T1.413, G.dmt, G.lite.

Wiring Selection: Default at Tip/Ring. Select Auto or A/A1 if necessary.

ADSL Configuration	
Parameters	
Annex Mode Config	User Selected
User Selected Annex Mode	Annex A
Trellis	Enabled
Handshake Protocol	Autosense - G.dmt first
Wiring Selection	Tip/Ring
Bit Swapping (No system reboot needed)	Disabled
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

3.4.3.8.2 DNS

A Domain Name System (DNS) contains a mapping table for domain name and IP address. In the Internet, every host has a unique and friendly name such as www.yahoo.com and IP address. The IP address is so hard to remember that you may just enter the friendly name www.yahoo.com and then the DNS will convert it to its equivalent IP address.

You can obtain Domain Name System (DNS) IP address automatically if ISP provides it when you logon. Or your ISP may provide you with an IP address of DNS. If this is the case, you must enter the DNS IP address.

Status	<h2>DNS Configuration</h2> <h3>DNS Proxy Selection</h3> <table border="1"> <tr> <td>DNS Proxy</td> <td>Enabled</td> </tr> <tr> <td>Auto Discovery</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>User Configuration</td> <td><input type="checkbox"/></td> </tr> <tr> <td>DNS Server</td> <td><input type="text"/> Add</td> </tr> </table> <h3>DNS Server Selection</h3> <table border="1"> <tr> <td>DNS Server</td> <td>Disabled</td> </tr> <tr> <td>Url Name</td> <td><input type="text"/></td> </tr> <tr> <td>Host Ip</td> <td><input type="text"/></td> </tr> <tr> <td>Action</td> <td>Add</td> </tr> </table> <p>Submit Cancel</p> <h3>DNS Proxy Settings</h3> <table border="1"> <tr> <td>#</td> <td>DNS Server IP</td> </tr> </table> <h3>DNS Server Setting</h3> <table border="1"> <tr> <td>#</td> <td>Url Name (Host.Domain)</td> <td>Host IP</td> </tr> </table>	DNS Proxy	Enabled	Auto Discovery	<input checked="" type="checkbox"/>	User Configuration	<input type="checkbox"/>	DNS Server	<input type="text"/> Add	DNS Server	Disabled	Url Name	<input type="text"/>	Host Ip	<input type="text"/>	Action	Add	#	DNS Server IP	#	Url Name (Host.Domain)	Host IP
DNS Proxy		Enabled																				
Auto Discovery		<input checked="" type="checkbox"/>																				
User Configuration		<input type="checkbox"/>																				
DNS Server		<input type="text"/> Add																				
DNS Server		Disabled																				
Url Name		<input type="text"/>																				
Host Ip		<input type="text"/>																				
Action		Add																				
#		DNS Server IP																				
#		Url Name (Host.Domain)	Host IP																			
Quick Start																						
Configuration																						
WAN																						
LAN																						
Wireless																						
System																						
Firewall																						
VPN																						
Virtual Server																						
Advanced																						
ADSL																						
DNS																						
Dynamic DNS																						
NAT																						
RIP																						
SNMP Configuration																						
Static Route																						
Misc Configuration																						

SAVE CONFIG
RESTART

3.4.3.8.3 Dynamic DNS

With Dynamic DNS service, a domain name can be translated into a dynamic IP address, which is often issued by ISP for dial-up service. A local server, such as Web server, Email server or FTP server, can then be easily accessed without knowing the changing IP address.

Status	<h2>Dynamic DNS</h2> <h3>Parameters</h3> <table border="1"> <tr> <td>Dynamic DNS</td> <td><input type="radio"/> Enable <input checked="" type="radio"/> Disable</td> </tr> <tr> <td></td> <td>www.dyndns.org (custom)</td> </tr> <tr> <td>Host</td> <td><input type="text"/></td> </tr> <tr> <td>User Name</td> <td><input type="text"/></td> </tr> <tr> <td>Password</td> <td><input type="text"/></td> </tr> <tr> <td>Period</td> <td>28</td> </tr> <tr> <td></td> <td>Hour(s)</td> </tr> </table> <p>Submit Cancel</p>	Dynamic DNS	<input type="radio"/> Enable <input checked="" type="radio"/> Disable		www.dyndns.org (custom)	Host	<input type="text"/>	User Name	<input type="text"/>	Password	<input type="text"/>	Period	28		Hour(s)
Dynamic DNS		<input type="radio"/> Enable <input checked="" type="radio"/> Disable													
		www.dyndns.org (custom)													
Host		<input type="text"/>													
User Name		<input type="text"/>													
Password		<input type="text"/>													
Period		28													
		Hour(s)													
Quick Start															
Configuration															
WAN															
LAN															
Wireless															
System															
Firewall															
VPN															
Virtual Server															
Advanced															
ADSL															
DNS															
Dynamic DNS															
NAT															
RIP															
SNMP Configuration															
Static Route															
Misc Configuration															

SAVE CONFIG
RESTART

Check the “Enable” button to access the Dynamic DNS service. You may sign up Dynamic DNS service at <http://www.dyndns.org> and there you can also register domain names.

Host: Enter one domain name you have registered.

User Name: Enter the username used for sign-up.

Password: Enter the password used for sign-up.

Period: Set the time period for the Router to exchange information with the DDNS server. In addition to update periodically according to this period setting, BIPAC 7100SG will take the same action automatically whenever the assigned IP changes

3.4.3.8.4 NAT

The **NAT Configuration** page allows the user to set the configuration for the Network Address Translation.

NAT Configuration

Parameters

NAT	Enable
Mode	Dynamic NAPT

Session Name	User's IP	Action
<input type="text"/>	<input type="text"/>	Add

[Session Name Configuration](#)

Information

#	Session Name	User's IP
---	--------------	-----------

Available Sessions

#	Session Name	Interface
---	--------------	-----------

Dynamic NAPT: It provides dynamic Network Address Translation capability between LAN and multiple WAN connections, and the LAN traffic is routed to appropriate WAN connections based-on the destination IP addresses and Rout Table. This eliminates the need for the static NAT session configuration between multiple LAN clients and multiple WAN connections.

NAT (Static): This option maps single WAN IP address to the local PC IP address. It is peer-to-peer mapping, one-to-one. For each WAN interface, only one local PC IP address can be associated with each WAN interface. Click the link **Session Name Configuration** to add the session name for WAN interface.

NAPT (Static): This option maps the single WAN IP address to many local PCs IP addresses, one-to-many. It is the multiple-mapping mechanism. For each WAN interface, more than one local PC can be associated with one WAN interface. Click the **Session Name Configuration** to add the session name for WAN interface.

Session Name: Enter the desired session name.

User's IP: Allows the user to assign the IP address to map the corresponding NAT/NAPT sessions.

Session Name status will be displayed at the middle of this page to show the corresponding Session Name with its IP address.

Click **Session Name Configuration**, the following screen displays.

NAT Session Name Configuration		
Session Name	Interface	Action
<input type="text"/>	Ip Pvc 0	Add
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>		
Go back to NAT Configuration		
#	Session Name	Interface

SAVE CONFIG RESTART

Session Name: Enter the desired session name.

Interface: This field allows the user to choose specific WAN interface (PVC or PPP Session) for NAT session.

NAT allows only one entry (User IP) per session, NAPT allows many entries (User IPs) per session.

Select **Add** or **Delete** and then press the **Submit** button to add or delete any NAT session name setting to/from the following table.

Go back to the previous page, NAT Configuration, to continue further settings.

3.4.3.8.5 RIP

RIP Configuration	
Parameters	
RIP	Disabled
Border Gateway	Enabled
Supply Interval	30
Expire Timeout	180
Garbage Timeout	120
Advanced	Advanced Configuration
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	

RIP: Default is **Disabled**.

Border Gateway: Default is **Enabled**.

Supply Interval **seconds:** The default value is 30 seconds.

Expire Timeout **seconds:** The default value is 180 seconds.

Garbage Timeout **seconds:** The default value is 120 seconds.

Status
Quick Start
Configuration
WAN
LAN
Wireless
System
Firewall
VPN
Virtual Server
Advanced
ADSL
DNS
Dynamic DNS
NAT
RIP
SNMP Configuration
Static Route
Misc Configuration

RIP Advanced Configuration

RIP Per Interface Configuration

Interface	Enabled?	Supplier	Listener
Ip Pvc 0	No	Disabled	V1

[Back to RIP Configuration](#)

Submit Cancel

Current RIP Settings

#	Interface	Enabled?	Supplier Mode	Listener Mode
1	Ip Pvc 0	No	Disabled	V1+V2
2	Ip Pvc 1	No	Disabled	V1+V2
3	Ip Pvc 2	No	Disabled	V1+V2
4	Ip Pvc 3	No	Disabled	V1+V2
5	Ip Pvc 4	No	Disabled	V1+V2
6	Ip Pvc 5	No	Disabled	V1+V2
7	Ip Pvc 6	No	Disabled	V1+V2
8	Ip Pvc 7	No	Disabled	V1+V2
9	Ip Pvc 8	No	Disabled	V1+V2
10	Ip Pvc 9	No	Disabled	V1+V2
11	Ip Lan	No	V2 BC	V1+V2

SAVE CONFIG RESTART

3.4.3.8.6 SNMP

Status
Quick Start
Configuration
WAN
LAN
Wireless
System
Firewall
VPN
Virtual Server
Advanced
ADSL
DNS
Dynamic DNS
NAT
RIP
SNMP Configuration
Static Route
Misc Configuration
Diagnostic Test

SNMP Configuration

System Name
System Contact
System Location
System OID: 1.3.6.1.4.1.4900
Read Community: public
Write Community: private
Trap Community: trap community
Trap SNMP Version: Version 1

Trap IP #1	0.0.0.0	Trap Port #1	0
Trap IP #2	0.0.0.0	Trap Port #2	0
Trap IP #3	0.0.0.0	Trap Port #3	0
Trap IP #4	0.0.0.0	Trap Port #4	0
Trap IP #5	0.0.0.0	Trap Port #5	0

Submit Reset

SAVE CONFIG RESTART

Simple Network Management Protocol (SNMP) is an optional feature that may or may not be supported by your ADSL Bridge/Router.

SNMP is an application layer protocol that is used for managing networks. SNMP is an optional feature that may or may not be in the specific firmware that you are working with. There are several components that make up the SNMP structure, including agents, network management stations (NMS), network management protocols, and a management information base (MIB). An SNMP agent is a node that resides on the network, typically a computer or a router. The SNMP agent is controlled and configured by the NMS by sending SNMP messages between one another. SNMP agents are logged and identified in a Management Information Base (MIB), in which they are identified by an object identifiers (OID).

One feature of SNMP is SNMP traps. SNMP traps are used to notify network managers of significant events that have taken place in the network. These traps are sent to the SNMP NMS (NMS Server located at Trap IP) through the specified ports.

SNMP System Identification: The System Name, System Contact, System Location, and System OID are provided to identify the SNMP NMS. The System OID is the ID number placed in all Trap reports.

The System Name, System Contact, and System Location can be up to 127 characters. Default value for System OID is 1.3.6.1.4.1.4900. **Read Community:** This is the password to access public information. The Read Community can be up to 127 characters. Default is "public." **Write Community:** This is the password to access private information.

The Write Community can be up to 127 characters. Default is "private." **Trap Community:** This is the password to access and view SNMP traps.

The Trap Community can be up to 127 characters. Default is "trap community." **Trap SNMP Version:** Select from Version 1 or Version 2. Default is Version 1. **Trap IP:** This is the IP address to which SNMP traps are sent. There can be up to 5 different SNMP trap destination IP addresses. **Trap Port:** This is the corresponding port for the SNMP trap (see **Trap IP** above)

3.4.3.8.7 Static Routing

If you have another router with a LAN-to-LAN connection, you may create a static routing on the router that is the gateway to Internet.

The screenshot shows a web-based configuration interface. On the left is a vertical menu with various system settings. The main area is divided into two sections: 'System Default Gateway Configuration' and 'Static Route Configuration'.

System Default Gateway Configuration

Parameters

Address Pool Selection: ☐ None, ☒ Auto, ☐ Select Interface (Ip Pvc 0), ☐ Specify IP (text field)

Submit

Static Route Configuration

Destination	Netmask	Gateway
<input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> Specify IP <input type="text"/>
		<input type="radio"/> Select Interface (Ip Pvc 0)

Add (dropdown), Submit, Reset

Manually Configured Routes

#	Destination	Netmask	Gateway

SAVE CONFIG, RESTART

Add: Click this button to add a new static routing. When you click this button, the next figure appears.

Delete: Check the item you want to delete. Then, click the “Delete” button.

Destination / Subnet Mask / Gateway Address: Fill in these fields required by this Static Routing function.

3.4.3.8.8 MISC Configuration

Miscellaneous Configuration	
Parameters	
HTTP Server Access	<input type="radio"/> All <input checked="" type="radio"/> Restricted
<input checked="" type="checkbox"/> LAN	
<input type="checkbox"/> WAN Specify IP	10.0.0.10
Subnet Mask	255.0.0.0
HTTP Server Port	80
HTTP Password Protection	Enabled
FTP Server	Disabled
	<input type="checkbox"/> Disable WAN side FTP access
TFTP Server	Disabled
Command Line Interface	Enabled
	<input checked="" type="checkbox"/> Disable WAN side access
DMZ	Disabled
DMZ Host IP	0.0.0.0
IGMP Proxy	Disabled
PPP Half Bridge	Disabled
PPP Reconnect on WAN Access	Disabled

SAVE CONFIG RESTART

HTTP server access: Default at **Restricted**.

HTTP server port: Default at **80**.

FTP server: Default at **Enabled**.

TFTP server: Default at **Disabled**.

DMZ: Regarding the DMZ Host, it is a local computer exposed to the Internet. Therefore, an incoming packet will be checked by NAT algorithms in the ADSL Router, then passed to the DMZ host when the packet is not sent by hacker or not limited by the virtual server list.

DMZ HOST IP: Enter the IP address of the DMZ host.

DHCP Relay: Default at **DHCP Server**.

DHCP Target IP: Default is **0.0.0.0**

IGMP Proxy: Default at **Disabled**.

PPP Half Bridge: Default at **Disabled**.

PPP reconnect on WAN access: Default at **Disabled**. Select **Enabled** if you want to automatically re-establish the PPPoE/PPPoA session when disconnected by ISP.

3.4.3.8.9 Diagnostic Test

As soon as you enter the test program, all tests will run automatically to diagnose the connection status of the device.

The screenshot shows a web-based configuration interface. On the left is a sidebar menu with various options: Status, Quick Start, Configuration, WAN, LAN, Wireless, System, Firewall, VPN, Virtual Server, Advanced, ADSL, DNS, Dynamic DNS, NAT, RIP, SNMP Configuration, Static Route, Misc Configuration, and Diagnostic Test (which is highlighted). The main area displays the 'Results' of the 'Diagnostic Test'. The results are organized into sections: 'Checking LAN Connection' (Testing Ethernet LAN connection: PASS, HELP), 'Checking ADSL Connection' (Testing ADSL Synchronization: FAIL, HELP), 'Checking Circuit 0 for Network Connection' (Test ATM OAM Segment Loop Back: SKIPPED, HELP; Test ATM OAM End-to-End Loop Back: SKIPPED, HELP; Test Ethernet connect to ATM: SKIPPED, HELP; Test IP connect to Ethernet: SKIPPED, HELP), and 'Testing Internet Connection' (Ping primary DNS: SKIPPED, HELP; Query DNS for www.google.com: SKIPPED, HELP; Ping www.google.com: SKIPPED, HELP). At the bottom right of the interface are two buttons: 'SAVE CONFIG' and 'RESTART'.

Results		
Diagnostic Test		
Checking LAN Connection		
Testing Ethernet LAN connection	PASS	HELP
Checking ADSL Connection		
Testing ADSL Synchronization	FAIL	HELP
Checking Circuit 0 for Network Connection		
Test ATM OAM Segment Loop Back	SKIPPED	HELP
Test ATM OAM End-to-End Loop Back	SKIPPED	HELP
Test Ethernet connect to ATM	SKIPPED	HELP
Test IP connect to Ethernet	SKIPPED	HELP
Testing Internet Connection		
Ping primary DNS	SKIPPED	HELP
Query DNS for www.google.com	SKIPPED	HELP
Ping www.google.com	SKIPPED	HELP

Checking LAN Connection

Testing Ethernet LAN connection

This test passes if the Ethernet LAN interface is working properly.

Checking ADSL Connection

Testing ADSL Synchronization

This test checks your DSL modem to see if it can successfully negotiate and establish a DSL connection with your service provider's central office equipments. The test returns PASS if a DSL connection is established.

If this test returns FAIL, please try the test again a few minutes after this test is completed. Since your DSL modem need a couple of seconds to a few minutes to establish the DSL connection depending on your phone line quality. If this test returns FAIL, make sure your phone line is connected to your DSL modem securely, and also check with your service provider to see if your service is activated.

If this test returns FAIL, all other tests will be skipped.

Checking Circuit 0 for Network Connection

Test ATM OAM Segment Loop Back

This test sends ATM OAM F5 Segment loop back request cells to the central office equipments through your DSL connection. This test will pass if response cell is received. Since your service provider might not support this test, your DSL modem could still work even if this test fails.

If this test fails consistently and your DSL modem seems not working, check to make sure the VPI and VCI are configured correctly.

This test returns FAIL if the DSL synchronization test failed.

Test ATM OAM End-to-End Loop Back

This test sends ATM OAM F5 End-to-End loop back request cells to the central office equipments through your DSL connection. This test returns PASS if response cell is received. Since your service provider might not support this test, your DSL modem could still work even if this test fails.

If this test return FAIL consistently and your DSL modem seems not working, check to make sure the VPI and VCI are configured correctly.

This test returns SKIPPED if the DSL synchronization test failed.

Test Ethernet connect to ATM

This test returns PASS if the ATM AAL5 module is loaded correctly in your DSL modem. If this test returns FAIL, an internal error has occurred.

This test returns SKIPPED if the DSL synchronization does not return PASS.

Test IP connect to PPP

This test returns PASS if your DSL modem has been assigned a valid IP address by your service provider through DHCP or your DSL modem is assigned a valid IP address statically.

If this test returns FAIL, run this test again a few minutes after this test is completed. If this test returns FAIL consistently and DHCP client is turned on in your DSL modem, check with your service provider. If this test returns FAIL consistently and your DSL modem is statically assigned an IP address, make sure the IP address is the correct one assigned by your service provider.

This test returns SKIPPED if "Ethernet connect to AAL5" test does not return PASS.

Test Internet connection

This test returns PASS if the gateway can be reached through ping request. The gateway is assigned by your service provider, or obtained from your service provider by PPP negotiation or DHCP negotiation.

If this test returns FAIL, run this test again a few minutes after this test is completed. If this test returns FAIL consistently and your DSL modem seems not working, check to make sure your statically assigned IP address is configured correctly or DHCP client is turned on with the current VC.

This test returns SKIPPED if "IP connect to PPP" or "IP connect to Ethernet" test does not return PASS.

3.4.4 Save Config

Click the **Submit** button to write settings to flash. Then, the system will reboot for changes to take effect.

The screenshot shows a web interface for saving configuration. On the left is a vertical sidebar with four menu items: 'Status', 'Quick Start', 'Configuration', and 'Save Config'. The 'Save Config' item is highlighted in blue. The main content area has a header 'Save Config' and a sub-header 'Save settings and reboot'. Below the sub-header is a 'Submit' button. At the bottom right of the interface are two large blue buttons labeled 'SAVE CONFIG' and 'RESTART'.

Status	Save Config Save settings and reboot <input type="button" value="Submit"/>
Quick Start	
Configuration	
Save Config	

Chapter 4

Troubleshooting

If the ADSL Router is not functioning properly, you can refer first to this chapter for simple troubleshooting before contacting your service provider. This could save your time and effort but if the symptoms persist, then consult your service provider.

Problems Starting Up the ADSL Router

Problem	Corrective Action
None of the LEDs are on when you turn on the ADSL Router.	Check the connection between the adapter and the ADSL Router. If the error persists, you may have a hardware problem. In this case, you should contact technical support.

Problems with the WAN Interface

Problem	Corrective Action
Initialization of the PVC connection failed.	<p>Ensure that the cable is connected properly from the ADSL port to the wall jack. The ADSL SYN LED on the front panel of the ADSL Router should be on. Check that your VPI, VCI, type of encapsulation and type of multiplexing settings are the same as what you collected from your telephone company and ISP.</p> <p>Reboot the ADSL Router. If you still have problems, you may need to verify these variables with the telephone company and/or ISP.</p>

Problems with the LAN Interface

Problem	Corrective Action
Can't ping any station on the LAN.	Check the LAN LNK LED on the front panel. The LED should be on for a port that has a station connected. If it is off, check the cables between your ADSL Router and the station.
	Verify that the IP address and the subnet mask are consistent between the ADSL Router and the workstations.

Problems Connecting to a Remote Node or ISP

Problem	Corrective Action
Can't connect to ISP.	Check section 3.4.1.3 "Status – PPP status" to verify the line status.

Product Support and Contact Information

Most problems can be solved by referring to the **Troubleshooting** section in the User's Manual. If you cannot resolve the problem with the **Troubleshooting** chapter, please contact the dealer where you purchased this product.

Contact Billion**AUSTRALIA**

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